Reducing C-17 Pilot Training Delays

GRADUATE RESEARCH PROJECT

Eric J. Moritz, Major, USAF

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DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

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Eric J. Moritz

Major, USAF

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Abstract

The C-17 pilot training pipeline at Altus Air Force Base is perpetually behind schedule, straining financial and human resources. This research analyzes the extent, significance and sources of those delays. Additionally, this paper offers some potential solutions to the predicament.

This research examines most of the current databases used for tracking the flow and effectiveness of the different programs at Altus, including those employed by both training organizations, Boeing Aerospace and the 58th Airlift Squadron. This paper includes some basic analysis regarding the numerical statistics contained within those databases and describes the consequences of those delays, both from a training and operational perspective. The emphasis is on two of the more-troubled courses, the Aircraft Commander Initial Qualification and the Instructor Aircraft Commander programs. Despite a slight improvement over previous years, those two programs still suffered from poor graduation timeliness in 2003.

The sources of those delays include higher-than-expected student retraining rates and under-sourced aircraft allocations. Potential solutions range from adding and protecting aircraft resources to revising current database tracking methods. Other viable options include the adjustment of the program timelines to reflect a more accurate training environment and overlapping simulator and flight training phases to take advantage of formerly unproductive 'down days'. These recommendations are not mutually exclusive, so the benefits of employing more than one option would be additive. Fortunately, the potential for improvement in the C-17 training arena can be harnessed with the acceptance of some, or all, of these relatively straightforward approaches.

Acknowledgments

I would like to first thank Dr. Joan Hendrix without whose effort in collecting and organizing vast amounts of Training Management System data this research would not have been possible. I want to express my sincere appreciation to Major Shane Smith who fielded each of my questions and queries for data with speed and precision. My thanks also go to my AFIT advisor, Dr. William Cunningham, for making sure I maintained the proper vector throughout the project. Lastly, this study would not have been achievable without the unwavering assistance of Ms. Janice Missildine, the heart and soul of Air Mobility Warfare Center research.

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Chapter 1 – Introduction

"Shrinking budgets may force a smaller cargo airlift force structure and/or a dual-role airframe."

Cargo Airlift Capability Statement
Air Mobility Master Plan 2004

Background

As the War on Terrorism continues to rage in Iraq and Afghanistan, American soldiers, regardless of branch of service, find themselves in great demand. Though the military continues to rely more and more on technology to achieve success, the role of the 'human' in wartime operations remains critical. As the 'do more with less' military environment persists, the need to effectively leverage those finite human resources is more imperative than ever. While virtually every military organization is under extreme pressure to perform at higher levels and to do it with fewer people and resources, the cadre of pilots that fly the Air Force's (AF) newest airlift aircraft, the Boeing C-17 Globemaster III, is undoubtedly one of the most burdened of those groups.

By the end of fiscal year 2004 (FY04), over 120 C-17's should be in the United States' military inventory. The active contract for the delivery of 180 airframes is scheduled to continue through FY09, with the likely acquisition of at least 222 C-17's stretching the timeline out to at least FY13 (AMMP, 2004). This significant growth in airframes, combined with the unrelenting global demand for airlift capabilities, mean that the C-17 pilot force will continue to be a scarce resource throughout the foreseeable future. Not only is the impact of that demand felt at the Air Force operational wing level, but also in the C-17 training environment at Altus Air Force Base (AFB), Oklahoma.

Altus AFB is home to Boeing Aerospace's C-17 training division and Air Education and Training Command's (AETC) 58th Airlift Squadron (AS). Both parties combine to teach Air Force students virtually every aspect of operating the C-17. The different levels of training curriculum are designed to produce skill sets varying from basic copilot qualification to instructor aircraft commander. Since the C-17 fulfills both strategic and tactical airlift roles around the globe, the training programs are comprehensive and complex, with the longest course lasting approximately four months (PFT, 2002). Each of the various C-17 training programs are all similarly divided into two main phases, the combined Computer Based Training (CBT) and simulator phase taught by Boeing employees, followed by the flight line phase conducted by Air Force instructor pilots. Depending on the training course, the flying portion of the program may have as few as two planned sorties or as many as eight (Refly Tracker, 2004). Each different track concludes with the successful completion of an aircraft evaluation, or 'checkride', as it is commonly known. Unfortunately, the Altus training programs, particularly the flight line portions of those curriculums, rarely run according to schedule. All too often, valuable human resources are delayed in this inefficient process while their skills are desperately needed in the operational field.

Problem Statement

When an airlift student begins a C-17 training program, their course syllabus outlines the CBT/Simulator phase schedule for the entire program. With the relative simplicity and reliability of computer and flight simulator training devices, downtime is seldom an issue. Therefore, close-out dates for the CBT/Simulator segment of the

training program usually occur 'on-time'. Upon nearing completion of this phase, students normally contact the 58th AS for their proposed flight line itinerary. The 'wait-time' between completion of the CBT/Simulator phase and the beginning of the flight line phase can range anywhere from just one day to more than two weeks, depending on student backlog. Even after the flight line training begins, various delays within the program can cause the actual graduation date to slip an additional two weeks—a setback that not only pulls precious resources away from a demanding operational environment, but one that demoralizes the very people the Air Force relies on to accomplish its mission (Grad Tracker, 2004). The purpose of this research is to examine the significance of those delays and provide recommendations to reduce them.

Research Questions

1. Primary Research Question

How can delays in the C-17 pilot training program be reduced without sacrificing effectiveness?

2. Investigative Questions

a. How much delay exists in the C-17 pilot training program?

b. What impact do delays have?

c. What circumstances cause delays?

d. What methods can be appropriately employed to mitigate those delays?

Scope

The scope of this research is, by design, narrow. There are currently eight different C-17 pilot training courses, as well as three additional loadmaster courses (Quota, 2003). With thousands of training sorties each year (most with at least two students on board), it is beyond the scope of this paper to address the particulars of each and every program. Instead, only two training courses are evaluated in detail, with the intent being that the research findings could apply, at least in part, to all C-17 training courses.

The Aircraft Commander Initial Qualification (ACIQ) and Instructor Aircraft Commander (IAC) programs were chosen for two reasons. First, because these two courses are generally longer than others, more empirical data exists for investigation and analysis. Second, as a graduate of both programs, the author has additional experience and personal interest with the courses.

Additionally, the limited scope of this research will hopefully help generate a solution that is immediately employable. Ultimately, it will be up to Air Mobility Command (AMC) and AETC to decide whether the subject warrants immediate action or further research, but the intent is to provide recommendations that are, in and of themselves, complete.

Limitations

There are a number of issues that impose limitations on this research. First, Boeing Aerospace is a 'for-profit' contractor and therefore, lacks many of the same

motivations as the Air Force. Though a majority of Boeing employees were extremely helpful with this research, not all requested data was made available. Therefore, contractual and other privileged information is not considered in this paper's findings, analysis, or recommendations.

Another limitation to this research is the depth, or lack thereof, of data points. As previously mentioned, the ACIQ and IAC courses tend to have more available information than other programs. However, even these databases are limited by their relative currency. Much of the detailed data used for this analysis have only been recorded for the last two years or less. Therefore, complete numeric analysis is detailed only for FY02 and FY03 (existing data for FY04 is used when available and appropriate). When necessary, data from different years is directly compared. In each case, the most conservative estimates are used. Fortunately, due to the exponential growth of the C-17 program, the recent data points reflect the most appropriate information for analysis, while older data would describe a much less robust program, still in its infancy.

The key unit of time measurement discussed throughout much of this research is 'days', with most training occurring on a discrete, not continuous, timeline. The design of the programs at Altus AFB is such that students are scheduled to perform only one major training event per day, especially during the flight line portion of the curriculum. For example, a pre-mission planning session is scheduled for an entire day, even though the actual process only takes five or six hours. At that point, the aircrew would enter mandatory pre-mission crew rest in anticipation of flying a sortie the following day (AFI 11-2C-17, Vol 3, 1999). Due to regulatory restrictions (based primarily on limitations on the human body), there is no option or authority to compress these training events to take

advantage of a more continuous flow (i.e., students cannot be tasked with flying a sortie on the same day they mission plan or train in the simulator).

Finally, the author has attempted to conduct and present the research and recommendations in the most unbiased manner possible. However, it should be noted that as a former student (and late graduate) in the ACIQ, IAC, and Copilot Airdrop (CAD) programs, the motivations for this research were somewhat personal.

Assumptions

It is important to understand that the Altus training system is not completely unproductive. Eventually, all qualified students make it through the training. However, the intent of this research is to make the process more efficient while maintaining the level of quality. Therefore, some basic assumptions about the desired condition of the training program must exist:

1. Students should finish training on (or very near) the planned graduation date.
2. The amount of training for any given program will not be reduced.
3. Expanding training capabilities by flying on weekends should be an exception to the way the program is conducted, not a recurring method.
4. The general state of the 58th AS and its resources cannot be significantly altered (for example, there is no ability to double the number of instructors or add 10 C-17's to the training fleet)

Also, the 'day' unit of measurement discussed in the previous section needs to be further explained. Unless otherwise noted, any reference to 'days', whether numeric or written, implies work days. This approach eliminates apparent, yet irrelevant, deviations caused by prolonged weekends and holidays. For instance, no training was planned or conducted during the FY03 Christmas holiday, which lasted from Saturday, 21 December

2002 until Sunday, 5 January 2003. This research takes these planned delays into consideration and therefore, avoids any inappropriate results imparted to the statistical analysis. However, it does include those occasional weekend days when Altus chose to fly in order to help alleviate the student backlog—a total of nine for the FY03 ACIQ program (ACIQ TMS, 2004). The numeric analysis simply treats those periods as normal weekdays.

Ideally, every pilot class at Altus has two students that proceed through the training program together. There are, of course, exceptions to the rule—for instance, a student getting sick for an extended period or having to return to home station for a family emergency. However, unless otherwise noted, any reference to a student class or sortie implies that there are two pilots undergoing that training simultaneously.

Lastly, the numeric analysis shows a fair amount of detail, but that is a byproduct of the calculations, not the intent. Due to the nature of the information and the sources that supplied it, there is no particular significance to small numerical iterations.

Sources

The majority of this research involves the analysis and application of Boeing, AMC and AETC unit spreadsheets and databases. Additional materials and references of importance include, but are not limited to:

- C-17 Pilot Training Syllabi
- AF and AETC Instructions
- Capacity Planning Theory
- Statistics

Organization

Chapter 2 includes a full review of all pertinent records, including Boeing's Training Management System (TMS) and the 58th AS Grad Tracker databases, as well as additional and complementary Altus AFB databases. Chapter 3 discusses how the information contained in these products was validated, compared and evaluated. Chapter 4 consists of the analysis of that data and chapter 5 provides a final summary of findings and recommendations.

Chapter 2 – Literature Review

"US and allied forces require rapid delivery of equipment and supplies to support the warfighters; cargo airlift is required to provide time-critical equipment and supplies whose urgency or nature cannot wait for surface transportation."

Cargo Airlift Capability Statement
Air Mobility Master Plan 2004

Training Management System

TMS is a comprehensive database that allows for detailed tracking of student performance and progression throughout every phase of training. The database is accessible from any C-17 training location and is designed to be used both at the Altus schoolhouse and out at the operational units as well. The following figure depicts a sample TMS entry for a student enrolled in the ACIQ program, class 01. TMS is a proprietary database, but the information was imported into Microsoft Excel to better facilitate numerical analysis and presentation.

Table 1 – Training Management System Entry

Class	Start Date	Instructor Comments	SSN	Graded Date	Lesson Number	Lesson Title
ACIQ-01	12-Sep-03	PROFILE: local pattern only for instrument and vfr pattern work, both 3/4 flap and full flap work accomplished, ended up going to Clinton Sherman due to bird condition at Altus	A1234	5-Jan-04	05.7208	FLT: DAY TACTICAL PROFICIENCY SORTIE

While many of the TMS data fields are predetermined ('**Class**', '**Start Date**', '**SSN**', etc.), the block for '**Instructor Comments**' enables free form documentation of relevant issues like flight profile, weather factors, and student performance. These subjects can also be used to identify the causes of training delays. Though the entry

above includes the partial description of a flight profile, it is only a minor fraction of what would exist in an actual student 'write-up'.

The '**Lesson Number**' column correlates to a particular training event and is expanded upon in the student's training syllabus, which describes the different objectives required for each flight. In the example above, lesson number 05.7208 is actually the designator for the student's first sortie. Normally, that student would progress through a series of seven additional planned flights and would complete the final evaluation on lesson number 05.7215.

As mentioned, the database also includes '**Start Date**' and '**Graded Date**' entries, which permit relatively straightforward calculations and analysis regarding delays in the program.

By evaluating all data in combination, the capability emerges to determine the general progression of a student's training program. For instance, if reviewing TMS showed that student A1234 performed lesson 05.7212 three times instead of just once, an observer would obviously anticipate some subsequent documentation on a late graduation. If greater fidelity is required in order to understand the explanation of those extra sorties, analysis will likely have to go beyond a single '**Instructor's Comments**' block. To continue with the example, on the first flight, the instructor noted that bad weather prevented the accomplishment of a required training event, but on the second flight the instructor simply indicated that the student's performance was below acceptable levels. At that point, a reference of the dates of those flights shows an extensive gap between the first and second ride, suggesting a lack of continuity may have played a role in poor performance. This synergistic effort describes the best method of

gaining useful information from the TMS database when explicit comments or data are absent (IAC TMS).

Grad Tracker

Grad Tracker is an Excel spreadsheet designed by the 58th AS, primarily to compare planned versus actual graduation dates (i.e., on time, early or late). It also provides for some candid, yet limited, remarks to clarify causes of delay. The example below demonstrates an important note—graduation tracking is accomplished for each class as a whole rather than the individual (unless noted in the remarks section).

Table 2 – Grad Tracker Entry

Class	Names		Boeing Grad Date	Flt Line Date	PFT Grad	EST Grad	Date Last Flown	+/-	Remarks
IAC-10	A1234	B5678	07 Dec 03	08 Dec 03	05 Jan 04	09 Jan 04	08 Jan 04	4	Stud B Ride 1 incomp due to wx, 12 Dec

A comparison of the '**Boeing Grad Date**' and the '**Flight Line Date**' entries can be used to determine the delay between the CBT/Simulator and flight line phases. The value in the '**+/-**' column describes the number of days that graduation was either early (black digit) or late (red digit). A zero in that block indicates that graduation occurred on the exact, planned day. In this example, you can see that IAC class 10 graduated four days late. The information in the '**Remarks**' section indicates that at least one contributing factor for the late graduation appears to be the adverse weather that caused student B's incomplete ride 1 (Grad Tracker, 2004).

Training Syllabi

Every C-17 flight training program at Altus AFB has a syllabus that describes and directs each training activity. Of particular interest to this research, the syllabi describe planned flight training flows. Appendix A is an excerpt from the ACIQ syllabus and it demonstrates how the flight line training events should stream. In addition to eight sorties listed (FLT 1, FLT 2, etc.), four Mission Planning (MP) sessions and five 'Schedule Adjust' days are also included. Consequently, the flying phase of the ACIQ program is designed to last a total of seventeen days. Anything beyond that timeframe would be considered a late graduation.

The syllabi also contain similar schedules for the CBT/Simulator phases, describing every computer and simulator training objective—fifty-six lessons in all for the ACIQ program, including five 'Schedule Adjust' days in that phase as well (ACIQ Syllabus, 2002).

Program Flying Training/Quota

The Program Flying Training (PFT) and Quota products are Excel databases created and maintained by AETC. The PFT is a planning document designed to forecast the number of classes for each training program, their course start date, flight line start date and course completion date. The PFT is intended for long range analysis, with the product's initial creation occurring approximately two years prior to the actual fiscal year of implementation. Appendix B contains the actual FY03 PFT for the IAC program (PFT, 2002).

The PFT's sister product, the Quota spreadsheet, documents the actual occurrence of the same entries listed above. Once the active training period begins, the PFT becomes

a historical document and amendments are reflected on the Quota spreadsheet, not the PFT. Appendix C contains the Quota database for the FY03 IAC course (Quota, 2003).

Comparing these two products can provide an insight into the level of volatility in the training programs, demonstrated by the number of classes cancelled, added, or modified during the training year (note the '**Remarks**' column of the Quota spreadsheet which shows that one entire extra class was added while flight line training was cancelled for three others). More importantly, cross-referencing these products helps insure accurate calculations regarding early, late or on-time graduation tracking.

PFT Summary

The PFT Summary product is completely independent of the Program Flying Training database described above. Instead, the PFT Summary spreadsheet is created and maintained in the 58th AS Operations Flight at Altus AFB. A copy of the FY04 PFT Summary is located in Appendix D. The intent of the spreadsheet is to forecast the total number of flying hours and sorties required to complete each student training course and maintain local aircrew proficiency. The database is complex and attempts to consider virtually every aspect of the training environment, including sorties re-flown due to poor student performance, maintenance problems and inclement weather. In addition, instructors stationed at Altus AFB have their own set of flying requirements that must be met on a monthly, quarterly, and annual basis and these extra sorties are also taken into consideration. The PFT Summary is particularly pertinent to this research in its designation of a few very critical assumptions. First of all, it uses a firm '**Refly Factor**' forecast for each training program to predict the percentage of flights a student would be

expected to repeat for poor performance. It addition, it assigns similar percentages for two other important flight factors, maintenance and weather (labeled in the spreadsheet as '**INEFFECTIVE SORTIES due to MX Air Abort**' and '**GROUND INEFFECTIVE SORTIES**', respectively). The criticality of these fixed values will be addressed later in this research (PFT Summary, 2004).

Refly Tracker

The partial spreadsheet example attached in Appendix E is yet another tracking database used by the 58th AS. One intended purpose of Refly Tracker is to delineate the exact cause of repeated sorties. Common weather and maintenance issues are appropriately included as general options, but poor student performance is actually separated into more defined causes, like assault landings, air refueling (AR), or general knowledge (GK). This 'drilling down' analysis assists in pinpointing specific trouble spots. More than one reason can be annotated for each ride or student.

Another output of Refly Tracker, and one that is of more importance to this research, is the action taken to address these extra sortie requirements. Depending on the cause of refly, very different solutions may be in order. For example, if a flight is completely cancelled because of maintenance problems, the entire training event would be rescheduled for both students. However, if only one of two students in any given class fails to complete a training sortie for, let's say, assault landings, the response would likely be to finish that minimal training during another class's flight the following day. That way, an entire sortie is not wasted just to accomplish a single event. When the training is satisfactorily completed, the two original students reassemble and proceed

through the rest of the program together. The importance of the different solutions to incomplete training will be discussed further in Chapter 4 (Refly Tracker, 2004).

PFT Planner

The most complex of all the tracking devices, the 58th's PFT Planner monitors a number of planned versus actual data, including refly (poor student performance) and attrition (weather, maintenance, etc) rates, as well as hours flown on a daily, monthly and annual basis. Appendix F includes a PFT Planner worksheet that demonstrates these calculations. More importantly however, the PFT Planner also tracks the actual versus maximum number of aircraft sorties and 'turns', again on a daily, monthly and annual basis (PFT Planner, 2004).

Table 3 – PFT Summary FY04, Turn Required

Day Sorties	Night Sorties
1461	742
Turn Required	
Day	Night
5.96	3.03

On the surface, the phrase 'turns' implies the number of aircraft that fly twice a day, but its meaning is more complex and justifies an in-depth explanation. The above excerpt from the PFT Summary spreadsheet discussed earlier (Appendix D) will help shed some light on the subject. From Table 3, the number of flights needed to fulfill the training objectives of every Altus flying requirement in FY04 was 1,461 day and 742 night sorties (PFT Summary, 2004). The block labeled '**Turn Required**' describes the average number of sorties required each day (5.96) and night (3.03) throughout the year in order to meet those FY04 requirements. This does not necessarily mean that three

(rounding down) of the six (rounding up) aircraft that flew morning lines would 'turn' and fly evening sorties. In fact, only rarely would that occur (assuming there are more than six total aircraft in the Altus inventory). The most common scenario at any given time is that one or more aircraft are undergoing maintenance in the morning, but are available to fly evening sorties. Similarly, a few of the aircraft flying in the morning are likely to return to the Altus flight line in need of some repair, preventing them from meeting the evening requirements. The end result is that only one or two of the aircraft that flew in the morning will normally 'turn' to evening sorties. So, the expression 'six turn three' means nothing more than launching six airplanes in the morning and three in the evening and has no bearing on which actual aircraft are flying.

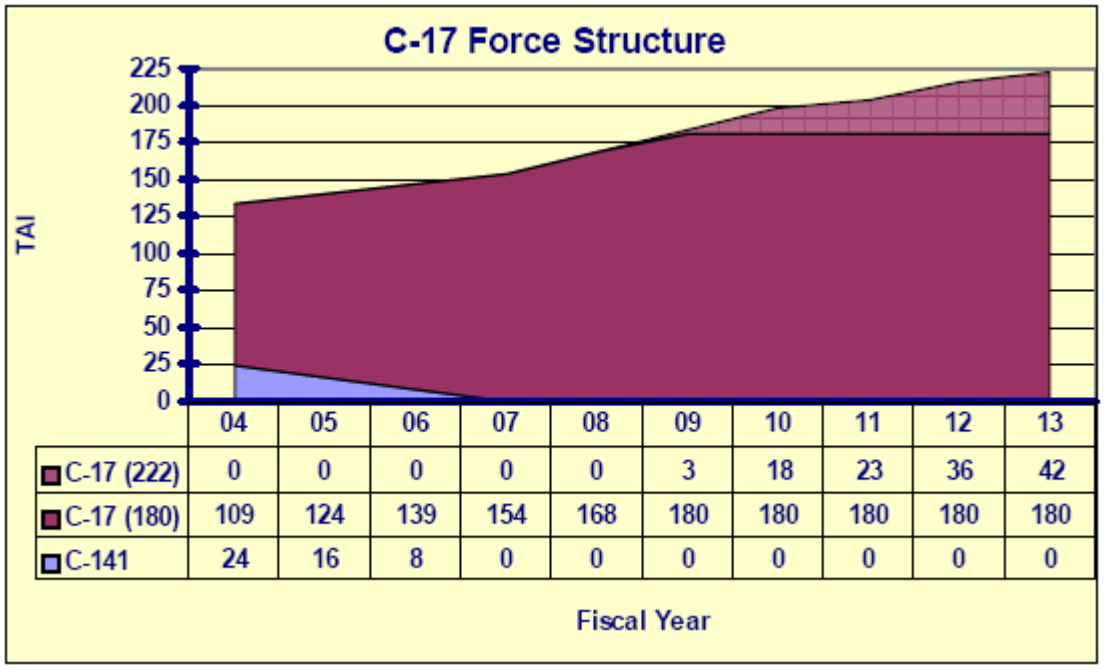
C-17FY Comp

A copy of yet another important Altus database is located in Appendix G. C-17FY Comp is a comprehensive spreadsheet that tracks various maintenance statistics, ranging from the number of Primary Authorized Aircraft (PAA) to their Mission Capable (MC) rate and does it for every month of the past seven years. These figures, as well as other data of interest from the C-17FY Comp spreadsheet, are discussed in later sections (C-17FY Comp, 2003).

Air Mobility Master Plan 2004

The Air Mobility Master Plan (AMMP) for 2004 discusses some critical issues concerning the future of America's airlift capabilities. As mentioned in the introduction, the fleet of C-17 aircraft and the pilots that fly them are expected to continue to grow through at least FY13. The graph below reveals the expected rate of that growth.

Figure 1 – C-17 Force Structure



	04	05	06	07	08	09	10	11	12	13
C-17 (222)	0	0	0	0	0	3	18	23	36	42
C-17 (180)	109	124	139	154	168	180	180	180	180	180
C-141	24	16	8	0	0	0	0	0	0	0

The provisional 222 aircraft noted in Chapter 1 and shown above may very well not be ultimate end-state inventory either:

> *"While the MAF possesses the world's premier mobility capability, additional effort is needed to meet future capability requirements. First, we need to increase our airlift capacity to meet Joint Chiefs of Staff (JCS) requirements. In the near term and mid term, we intend to satisfy this shortcoming procuring a minimum of 222 C-17 aircraft."*
>
> Cargo Airlift Roadmap
> Air Mobility Master Plan 2004

The implication of this 'minimum' 222 aircraft is that the Altus C-17 training environment will be increasingly tasked, not just in the next decade, but well beyond.

Aircraft Aircrew Tasking System

Like any military job, pilots are responsible for more than just flying operational missions and the differing degree of that responsibility varies widely. From basic copilots who have few other official tasks, to unit commanders who only get to fly on rare occasions when the demands of leadership ebb slightly, to reservists who are normally committed to completely separate civilian jobs—all of these come together to create the entire C-17 pilot force. How often these pilots perform operational flying duty is based primarily on demand. Hence, accurately assessing how much pilot 'capability' exists at any given time is, to say the least, a challenge. The answer, of course, is 'it depends'. During global contingencies when the demand for pilots is high, active duty wings must continually perform a delicate balancing act, measuring the benefits of fulfilling actual missions against the costs of neglecting extra, non-operational responsibilities and personal freedoms. In the short term, flying 'surges' pose little danger to the overall health of the organization. However, when training sorties, educational opportunities and official leave are repeatedly sacrificed in order to meet immediate operational requirements, the risk of significant, long-term impact is very real. With the sustained operations tempo created by simultaneous major military commitments in Operations Enduring Freedom and Iraqi Freedom, C-17 wings ran the very real risk of those long-term dangers. It quickly became obvious that they needed to track and measure the extent of operational taskings and the sacrifices that were being made to fulfill those responsibilities. Appendix H contains a visual depiction of that tracking system, demonstrating the tasking level of the McChord AFB and Charleston AFB C-17 active duty and reserve wings (as well as the total of all wings together). The definition of Aircraft Aircrew Tasking System (AATS), as used in this model, is the

number of aircrews that are available to fulfill operational requirements each day (for the sake of graphing an entire year on a single page, the data points are weekly, not daily). The number of AATS crews, at any given time, takes into consideration all the non-flying related commitments, like temporary duty (TDY), leave, and post-deployment downtime. The solid lines indicate the level at which wings were actually tasked, while the dashed lines describe the level of aircrew availability. Therefore, anytime the solid line is higher than the dashed line, crewmembers had to be pulled from other official duties to fulfill operational mission requirements (C-17 Crew Ute, 2004). Unfortunately, this goes beyond delaying paperwork or postponing dental appointments—it means crew members must cancel or be recalled from formal training, establish waivers to exceed maximum flight hours, or cancel personal leave.

Table 4 – C-17 Wing Utilization Snapshot – 14 January 04

C-17 AIRCREW UTILIZATION UNIT PARTICIPATION vs. PEACETIME				
			AVG Peacetime Utilization	YTD AVG Peacetime DEV
BASE	#	SQ	YTD AVG UTIL	YTD AVG % UTIL
Charleston	10	14AS	10.0	19.4
		15AS		
		16AS	29.4	294.2%
		17AS		
McChord	10	4AS	10.0	13.0
		7AS		
		8AS	23.0	229.9%
TOTALS	20		20.0	32.4
			52.4	262.1%

The above table is an excerpt from the same spreadsheet and provides a simpler snapshot and a slightly different perspective of the ongoing predicament for the active duty wings. The percentages in the right hand column indicate the level to which C-17 wings are being tasked above their peacetime commitment (C-17 Crew Ute, 2004).

Granted, the current operational environment does not qualify as a peacetime situation, but the intent of those measurements is to define a viable, long-term tasking level. As we enter the third year of the War on Terrorism, the continued practice of tasking C-17 wings at that 'surge' level brings with it significant risk.

C-17 PFT Issues

The continuing problem with late graduations in C-17 training programs has not gone unnoticed in the 58th AS or the rest of the leadership chain in AMC and AETC. C-17 PFT Issues is a Microsoft PowerPoint product created by the 58th for use in briefing Air Force leadership on all the relevant factors causing delays in the training process. Of specific interest to this research is a historical account of the PFT creation process. As the replacement for the aging C-141 Starlifter, the C-17 program, by default, adopted many of its forerunner's attributes. One of those assumptions was the refly rate, or the percentage of sorties that had to be re-flown due to poor student performance. Unfortunately, the C-17 program includes two difficult training requirements—assault landings and air refueling—that did not exist in the basic C-141 program. New students often fail to quickly meet the challenges posed by these somewhat aggressive maneuvers and the end result is higher refly rates and delayed student graduations.

The second significant point from this briefing is the explanation of the C-17 program's reliance on external training resources and how that dependence relates to the 'Schedule Adjust' days described in the syllabi. C-17 pilot training sorties do not occur in isolation. For both the ACIQ and IAC courses, most training sorties include air refueling maneuvers with tanker aircraft from different squadrons—very finite resources.

So when students A1234 and B5678, for example, come up on a flight training event which requires AR, tanker availability may or may not be immediately on hand. If it is not, then those students would use one or two of the aforementioned 'Schedule Adjust' days waiting for the external resources to become available (Gillespie, 2004).

Chapter 3 – Methodology

"All men are liable to error; and most men are, in many points, by passion or interest, under temptation to it."

John Locke, 1690
Essay Concerning Human Understanding
Book IV, 20, 17

Validation

The first order of business for the analytical portion of this research was to corroborate the critical, yet somewhat lacking, information contained in the Grad Tracker database described in Chapter 2. The spreadsheet, though the primary source of tracking late graduations, lacks inherent precision and accuracy. Not only can certain entries go completely unfilled, there is no automatic backup to deter the insertion of incorrect information (Grad Tracker, 2004). Both issues were somewhat of a problem within the database. Fortunately, the TMS database contains more preset fields and is significantly more detailed, using a single entry for each training event instead of one for each class (though the TMS spreadsheet was not entirely without its own occasional error). By cross-referencing both databases thoroughly, most of the important blanks were filled in and erroneous entries corrected (ACIQ TMS, 2004).

Finally, after both databases were verified, they were thoroughly sanitized. For privacy purposes, any references to actual student names and social security numbers were removed from copies of the materials used in this research paper. The amended Grad Tracker spreadsheets for the FY03 and FY02 ACIQ and IAC courses can be found in Appendixes I and J, respectfully. Due to the size of the TMS databases (over 2,000

lines of Excel data for both courses) only the last page of the FY03 ACIQ course spreadsheet is included in Appendix K (for the sake of space, entries in the '**Lesson Title**' column are incomplete).

Statistical Application/Numerical Analysis

Most of the data contained in the native TMS product does not lend itself to numerical analysis. A certain amount of field manipulation and Microsoft Excel formula development and application led to numerical information that not only permitted direct comparison to the data in Grad Tracker, but provided useful, standalone results (Ragsdale, 2001).

Database Comparison

After validating the data in both primary spreadsheets, the next step was to directly compare the numerical analysis of both. As mentioned previously, different results in the statistical examination of the two databases is largely due to the separate methods of tracking graduations—Grad Tracker monitors the status of the class as a whole, while in this research, TMS entries are used to track the graduation dates of individuals. Every additional database discussed in Chapter 2 was inspected closely for relative contributions to the late graduation problem as a whole.

Chapter 4 - Analysis

System Delays

The tables below summarize the findings regarding graduation timeliness, or lack thereof, for the ACIQ and IAC programs. The figures in red are the average number of days that students graduated late. The source data is included in Appendixes I, J and K.

Table 5 – Late Graduation Average FY02, in Days

2002	Grad Tracker	TMS
ACIO	6.833	6.625
IAC	4.545	3.812

Table 6 – Late Graduation Average FY03, in Days

2003	Grad Tracker	TMS
ACIO	5.407	4.333
IAC	3.435	2.772

Since the above averages could easily be skewed by just a few students with extremely late graduations, the following percentages, extracted from the same databases, help substantiate the extent of the problem.

Table 7 – Late Graduation Percentage, FY02

2002	Grad Tracker	TMS
ACIO	88.89 %	86.11 %
IAC	77.27 %	72.94 %

Table 8 – Late Graduation Percentage, FY03

2003	Grad Tracker	TMS
ACIO	85.19 %	83.33 %
IAC	66.13 %	63.41 %

As described in previous chapters, the different values for the two spreadsheets can be attributed to the separate tracking methods. In each case, the number in the TMS column is smaller than the corresponding value in the Grad Tracker column. Therefore, the technique used in Grad Tracker of monitoring graduation dates for the class as a whole, instead of on an individual basis, is generating larger-than-actual values. However, no matter which database is used for evaluation, substandard graduation timeliness remain a significant problem (Grad Tracker, 2004).

The late graduation dates documented above express the problems in the C-17 training system in a broad fashion. Data extracted from the TMS spreadsheet can provide some deeper fidelity in terms of viewing delays based on individual training events. The following tables describe the number of average days students waited in the queue for their next training event. For flights that required pre-sortie Mission Planning, the number of days in the queue corresponds to the wait before the MP event, not the flight. In that case it is assumed the sortie occurred as scheduled, the day after mission planning.

Table 9 – Average Days in the Queue per Training Event - ACIQ

	MP I Flt 1	Flt 2	Flt 3	MP II Flt 4	MP III Flt 5	Flt 6	Flt 7	MP IV Flt 8	**Total non-event days**
2002	3.916	.917	1.111	.879	1.048	1.903	1.556	.369	**11.697**
2003	1.833	.537	1.148	.536	.876	2.185	1.204	.272	**8.591**

Table 10 – Average Days in the Queue per Training Event - IAC

	MP I Flt 1	MP II Flt 2	MP III Flt 3	MP IV Flt 4	**Total non-event days**
2002	4.510	.692	2.395	.327	**7.924**
2003	2.920	.591	2.393	.038	**5.943**

The last column indicates the average total number of days that students were idle throughout the flying portion of the program. Included in this figure are the 'Schedule Adjust' days described in the syllabus and discussed in Chapter 2 (ACIQ Syllabus, 2002). While the table shows that there are considerable delays before most events, the figures in the first column indicate the disproportionate wait incurred before the very first flight training event.

Impact of Delays

The discussion in Chapter 2 regarding the Aircraft Aircrew Tasking System product (Appendix H) emphasized the negative effect that the lack of available aircrews has on operational C-17 wings with the loss of leave, TDY, post-deployment time, etc. (C-17 Crew Ute, 2004). Obviously, an inefficient C-17 training program is not the sole instigator of this dilemma, but it is one contributor. Overall, its impact on the long-term operational capability of C-17 wings is probably the single most significant and detrimental effect of the troubled Altus training program. However, additional adverse outcomes exist as well.

Not only is it usually desirable to get pilots out of the training environment and back in operational cockpits quickly, but it is imperative that those pilots be as capable as possible. While prolonged training does not necessarily prevent effective learning, it does little to further it. Students, in general, perform better when the learning flow is continuous—study, practice and then implement, all in short order (Charney & Conway, 1997). Unnecessary delays in a training program serve to work against this continuity, and render the curriculum less effective.

However, it is not just delay itself that works against the desired end-state. Just the **impression** of inefficiency is enough to have a dramatic impact on motivation and trust—extremely important attributes for student pilots, especially if the absence of such feelings translates into poor performance (Hawkins, 1993).

> *"We shall discover that the perception of waiting often is more important to the consumer than the actual time spent waiting, suggesting that innovative ways should be found to reduce the negative aspects of waiting."*
>
> (Fitzsimmons & Fitzsimmons, 2004, p. 286)

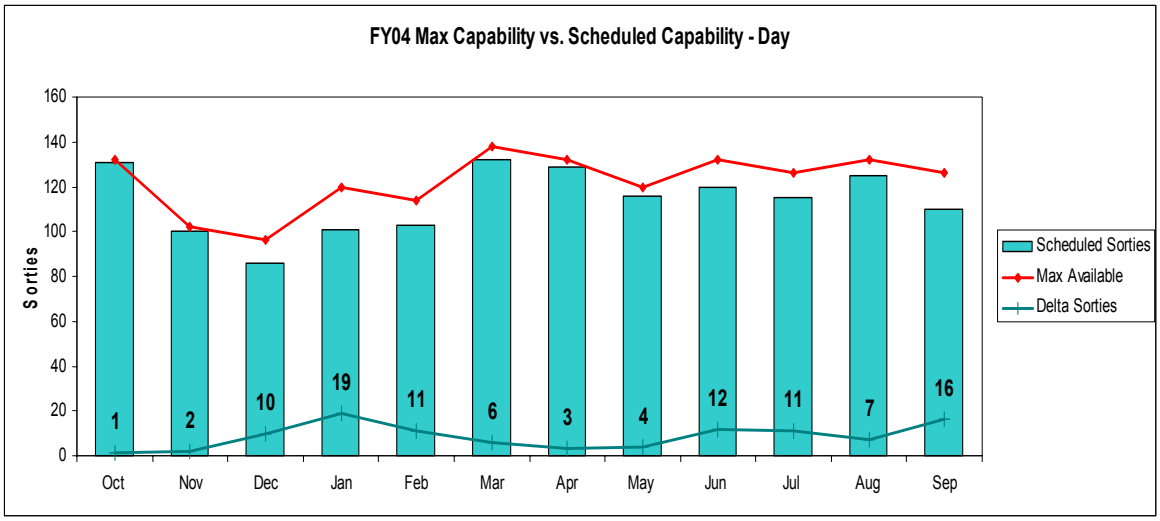
Discontent among students will continue to linger as long as graduation dates occur later than planned and the end result can be an unpleasant and unproductive training environment.

Sources of Delay

The PowerPoint briefing mentioned in Chapter 2 described a very critical link in the C-17 pilot training chain—the reliance on tanker aircraft to complete flying requirements. As long as air refueling squadrons continue to be restrained by the same issues that weigh upon most military organizations (manning, financial resources, training requirements, etc.), their role as 'limiting factors' will continue. The 58th AS actually estimates the delay in aligning C-17 sorties with air refueling aircraft at three to four days per class. With only five 'Schedule Adjust' days in the ACIQ flying program (and only three in the IAC course), little flexibility remains to cope with other common setbacks, like bad weather, maintenance and substandard student performance (Gillespie, 2004).

Another potential antagonist listed in that briefing is the lack of airframes, though the proof is somewhat veiled. The Altus training squadron had a Primary Aircraft Authorization (PAA) of 10 in FY03 and 9 in FY02. Unfortunately, the actual aircraft operating at Altus, also known as Primary Aircraft Inventory (PAI), averaged considerably lower in these years, at only 9.2 and 8.3, respectively. Demands for more aircraft in the operational environment and unpredicted maintenance delays are two of the contributors to the low PAI at Altus. After applying a MC rate of 82.6% (FY03) to the PAI, only 7.6 aircraft remained for daily taskings (C-17FY Comp, 2003). Unfortunately, there is no FY03 aircraft requirement data to match this capability against. So the best—and most conservative—option is to use the 'turn' figures from the FY04 PFT Summary spreadsheet (Appendix D) for evaluation (PFT Summary, 2004). Contrary to the Altus PowerPoint briefing, the comparison demonstrates that an **excess** capacity exists with only 5.96 aircraft required (day sorties are always more limiting than night) and 7.6 available. According to this capability graph from the PFT Planner spreadsheet, this surplus will continue throughout FY04.

Figure 2 – FY04 Sortie Capacity versus Capability



Therefore, it appears that the difference between the 10 PAA and the 9.2 PAI in FY03 should have had no effect on the ability to generate missions. Regrettably, two important factors are not described in the PFT Summary database. First, the 58th AS regularly schedules a 'spare' aircraft to provide some flexibility in the daily flying schedule. Unfortunately, if it is not needed, the resource is wasted. Furthermore, when the aircraft availability is initially below seven on any given day, the inclusion of the 'spare' means only five sorties can be scheduled. Second, occasional ground training events can require the use of an available airframe. Though this issue has been largely resolved by moving the training until later in the day when demand for aircraft is lower, the perspective in the briefing includes this former practice (Gillespie, 2004).

As stated, Altus has recently adopted a tracking process that uses two broad categories to identify sorties that must be re-accomplished. The '**Refly**' category covers flights instigated by poor student performance while '**Attrition**' refers to incomplete sorties caused by virtually everything else. Each category is further broken down into more refined classes for closer scrutiny. The following figure, extracted from the FY04

Refly Tracker database, reveals how these values are stacking up for the first half of the year. The vertical dashed line under the '**Reason**' heading indicates the split between the two subsets.

Figure 3 – ACIQ & IAC Refly/Attrition Rates for FY04 (in progress)

	Refly		Attrition		Reason								Correction				# Classes YTD	Planned Rides/ Class
	#	%	#	%	AR	Assaults	Gnd Ops	GK/SA	MX	WX	DNIF	Other	Existing Stud Line	T-3	Refly Line	Hrs Added		
ACIQ	31	11.1%	43	15.4%	25	14	0	1	16	27	0	11	16	2	32	13.7	35	8
IAC	47	17.5%	41	15.3%	42	11	0	2	23	20	1	10	26	3	37	39.8	67	4

Fortunately, the '**Attrition**' rates for both courses are right on target at 15% and while the ACIQ '**Refly**' rate is relatively close to the predicted value of 9%, IAC students are repeating rides at nearly double the planned rate (Refly Tracker, 2004). The obvious result is additional delays in the IAC program.

Potential Solutions

The simplest and most obvious solution for reducing delays in the C-17 training program would be to just decrease the influx of students. Unfortunately, the continued expansion of the C-17 fleet and the high demand for pilots to fulfill wartime operational requirements makes this option unfeasible. Other alternatives must be investigated, starting with better management of aircraft assets.

Air Mobility Command must do its part to ensure that the number of aircraft available for training sorties at Altus is equal to (or greater than) the authorized amount (Gillespie, 2004). The training pipeline is critical to the success of future operational capabilities and while 'borrowing' aircraft from Altus to fulfill global obligations may be beneficial in the short run, long term impacts will outweigh those initial benefits.

Therefore, not only should Altus aircraft not be used for real-world taskings (except, of course, in the case of national emergencies), but AMC should be ready to help backfill Altus aircraft allocations when unexpected maintenance issues force PAI below PAA. The result will be improved graduation timeliness and, even more importantly, greater availability of pilots for operational service.

A more unique approach to the problem involves the employment of some universal Capacity Planning techniques (Fitzsimmons & Fitzsimmons, 2004). The basic idea is to fill the unalterable 'dead' time in the program with required events from somewhere else in the system where the resulting gaps can then be eliminated. For the C-17 training program, the first step is to transform the system from two separate and distinct blocks (CBT/Simulator and flight line training), into one continuous process. More specifically, the proposal requires compressing the Boeing phase of the training by shifting some non-critical CBT's to the flight line portion of the program. The immediate outcome is the use of the formerly unproductive 'Schedule Adjust' and other '**non-event days**' (Table 9) to accomplish useful curriculum, while simultaneously starting the flying training portion earlier. The desired effect should be twofold—shorter total training periods and more motivated students. Due to their operational—rather than training—focus, some CBT's could easily be moved into the flying phase of the program without sacrificing effectiveness. *Leadership Skills*, *Emergency Nuclear Airlift* (ENAF), and *Overseas Mission Planning* are just three good examples (ACIQ Syllabus, 2002).

The last practical solution is quite straightforward, though the thought of it may initially invoke a sense of apprehension. Late graduation rates are nothing more than relative measurements. If the course completion dates for each program were extended

by added a few more 'Schedule Adjust' days to the syllabus, graduation timeliness would obviously improve. The key to accepting this option is acknowledging first, that the current procedures are garnering fairly effective results and second, that the timeline is simply unrealistic (especially if critical components that determine the PFT schedule, like refly rates, tanker availability, or aircraft inventory, are incorrect). After all, Altus has been working diligently and successfully to seed the operational C-17 fleet with some of the Air Force's most capable pilots, despite a year-after-year increase in the student flow. The practice of adding students with minimal training requirements to pre-existing sorties (discussed in Chapter 2) is just one of many examples that demonstrate how well the 58th AS is adapting in order to improve the system (Gillespie, 2004). Yet, late graduations continue to be a problem. Even without any other improvements, simply adjusting the timeframe (assuming that great care is used not to exploit a more lenient schedule), would relieve some of the stress on both instructors and students. In reality, if the other solutions recommended in this section are not employed, amending the timetable may very well be the most appropriate action.

Chapter 5 – Conclusions

Next Step

The crux of this research was to identify the extent, sources and possible solutions to the lack of graduation timeliness plaguing the C-17 pilot training program at Altus AFB. However, it would be blatant injustice to ignore the obvious enhancements made in the past two years. Tables 5 and 6 demonstrate, without exception, that graduation timeliness significantly improved for both the ACIQ and IAC courses between 2002 and 2003. The Late Graduation percentages in Tables 7 and 8 and '**non-event**' days in the Tables 9 and 10 clearly illustrate the same thing— substantial improvements in critical efficiency measures. Based on the author's experience, both as a student and a researcher, these strides are the direct result of a focused effort and the continued pursuit of improvement on the part of the 58th AS. Even so, if the recent gains are going to continue, some notable shortcomings must be addressed.

First of all, record-keeping procedures must be improved. The comparison of the Grad Tracker and TMS databases in Chapter 4 underlines the need to institute a tracking system that monitors graduation dates for individuals, not classes. Furthermore, both spreadsheets suffered from obvious, yet repeated errors. Lastly, the number and complexity of databases used to track similar information is excessive and should be reduced.

Second, the **authorized** number of the airframes should also be the **minimum** number in the actual inventory. The training pipeline is too vital to the long term success of the operational fleet to subject it to repeated misuse. Additionally, if the 58th AS

expects to justify this need to AMC and Tanker Airlift Control Center (TACC), the documentation of that requirement needs to be explicit ('spare' and ground training aircraft need to be annotated). If PAI cannot be increased, then the process of scheduling a daily 'spare' aircraft should be abolished.

A more internal approach may also be a viable option. Shifting a few days worth of CBT training to the flight line phase of the program will allow students to enter the flying phase earlier—translating into earlier graduations—and will serve to reduce the number of unproductive days during this period.

Lastly, recognize that great strides have already been made in the C-17 training program, yet late graduations still persist. Higher-than-expected refly rates and an already over-aggressive training schedule are two prime contributors. Extending the programs' timeframe to reflect more accurate assumptions (the C-17 program is tougher than its C-141 predecessor) may be one appropriate measure.

Shortfalls and Limitations

Despite recent improvements, the depth of the C-17 training program data is limited. This research would have definitely benefited from more historical data. Furthermore, only two of the 58 Airlift Squadron's programs were analyzed thoroughly and while logical inferences can be made regarding the applicability of this research to the rest of Altus curriculum, those additional courses were not specifically targeted. Unfortunately, all programs use the same airframe and human resources, so the isolation of the ACIQ and IAC courses is somewhat inapplicable.

Recommendations for Future Research

The C-17 training program at Altus will likely undergo significant change in the near future. A new 'Single Track' system (more training will be required on initial qualification, but eliminate additional trips back to Altus for upgrade training) is expected to start next year. The effect that this new system has on graduation rates would obviously be a point of interest (Palmby, 2004).

Also, the flight training program at Altus may fit well into a more advanced queuing model application. With continually varying and multi-tiered levels of servers (instructors and aircraft) and so many uncontrollable factors (wartime commandeering of training aircraft, limited funds, etc.), developing an appropriate queuing network might be difficult, though not unachievable. This approach may uncover some additional avenues for improvement.

Summary

The demand for airlift assets is on the rise and the trend will likely continue. As the C-17 fleet steps up to meet this challenge, while simultaneously enduring its own internal growing pains, the burden of an inefficient training program cannot be borne. Despite notable advancements in the last two years, there is still room to improve. If just one of the initiatives mentioned in the beginning of this chapter is applied, the C-17 training program should realize some gains in efficiency. If all are adopted, late graduations should essentially disappear. The solutions are at hand—it is time to take hold.

Appendix A – ACIQ Syllabus – Flight Training Flow

DAY	LESSON TITLE	LESSON NUMBER	MEDIUM	DURATION	PREREQUISITE LESSONS
57	Mission Planning I	05.3301	IBT	6.00	05.6573
58	FLT 1: Day Pattern Only Training	05.7208	IBT FLT	4.30 5.00	05.3301
59	FLT 2: Day Air Refueling Mission	05.7209	IBT FLT	4.30 5.00	05.7208
60	FLT 3: Day Air Refueling Training	05.7210	IBT FLT	4.30 5.00	05.7209
61	Mission Planning II	05.3302	IBT	6.00	05.3301
62	FLT 4: Day DDS Mission Training	05.7211	IBT FLT	4.30 5.00	05.3302, 05.7210
63	Mission Planning III	05.3303	IBT	8.00	05.3302
64	FLT 5: Day DDS Mission Training	05.7212	IBT FLT	4.30 5.00	05.7211
65	Schedule Adjust Day				
66	FLT 6: Night Air Refueling Training	05.7213	IBT FLT	3.80 5.00	05.7212
67	FLT 7 Rec Ride/Night Air Refueling	05.7214	IBT FLT	3.80 5.00	05.7213
68	Schedule Adjust Day				
69	Mission Planning – Eval Flt.	05.3304	IBT	8.0	05.7214
70	FLT 8: USAF Evaluation	05.7215	IBT FLT	4.3 5.5	05.7214, 05.3304
71	Schedule Adjust Day				
72	Schedule Adjust Day				
73	Schedule Adjust Day				

Appendix B – IAC Program Flying Training – FY03

				ENTRIES			
CLASS	START	FSD	COMP				
NUMBER	DATE		DATE	USAF	ANG	AFRC	TOTAL
2003001	1-Oct-02	16 Oct 02	30-Oct-02	2			2
2003002	7-Oct-02	22 Oct 02	5-Nov-02	2			2
2003003	15-Oct-02	29 Oct 02	13-Nov-02	2			2
2003004	21-Oct-02	04 Nov 02	19-Nov-02	2			2
2003005	30-Oct-02	14 Nov 02	2-Dec-02			2	2
2003006	1-Nov-02	18 Nov 02	4-Dec-02	2			2
2003007	5-Nov-02	20 Nov 02	6-Dec-02	2			2
2003008	12-Nov-02	26 Nov 02	12-Dec-02	2			2
2003009	15-Nov-02	03 Dec 02	17-Dec-02	2			2
2003010	25-Nov-02	11 Dec 02	7-Jan-03	2			2
2003011	2-Dec-02	16 Dec 02	10-Jan-03	4			4
2003012	5-Dec-02	19 Dec 02	15-Jan-03	2			2
2003013	10-Dec-02	03 Jan 03	21-Jan-03	2			2
2003014	16-Dec-02	09 Jan 03	27-Jan-03	2			2
2003015	3-Jan-03	17 Jan 03	3-Feb-03	2			2
2003016	6-Jan-03	21 Jan 03	4-Feb-03	2			2
2003017	10-Jan-03	27 Jan 03	10-Feb-03	2			2
2003018	21-Jan-03	04 Feb 03	19-Feb-03	2			2
2003019	27-Jan-03	10 Feb 03	25-Feb-03			2	2
2003020	3-Feb-03	18 Feb 03	4-Mar-03	2			2
2003021	10-Feb-03	25 Feb 03	11-Mar-03	2			2
2003022	18-Feb-03	04 Mar 03	18-Mar-03	2			2
2003023	20-Feb-03	06 Mar 03	19-Mar-03	2			2
2003024	25-Feb-03	11 Mar 03	25-Mar-03	2			2
2003025	3-Mar-03	17 Mar 03	31-Mar-03	2			2
2003026	10-Mar-03	24 Mar 03	7-Apr-03	2			2
2003027	17-Mar-03	31 Mar 03	14-Apr-03	2			2
2003028	25-Mar-03	08 Apr 03	22-Apr-03	2			2
2003029	31-Mar-03	14 Apr 03	28-Apr-03			2	2
2003030	7-Apr-03	21 Apr 03	5-May-03	2			2
2003031	15-Apr-03	29 Apr 03	13-May-03	2			2
2003032	21-Apr-03	05 May 03	19-May-03	2			2
2003033	25-Apr-03	09 May 03	23-May-03	2			2
2003034	30-Apr-03	14 May 03	29-May-03	2			2
2003035	5-May-03	19 May 03	3-Jun-03	2			2
2003036	12-May-03	27 May 03	10-Jun-03			2	2
2003037	15-May-03	30 May 03	13-Jun-03	2			2
2003038	20-May-03	04 Jun 03	18-Jun-03	2			2
2003039	27-May-03	10 Jun 03	24-Jun-03	2			2
2003040	30-May-03	13 Jun 03	27-Jun-03	2			2
2003041	5-Jun-03	19 Jun 03	3-Jul-03	2			2
2003042	10-Jun-03	24 Jun 03	9-Jul-03	2			2
2003043	16-Jun-03	30 Jun 03	15-Jul-03	2			2
2003044	25-Jun-03	10 Jul 03	24-Jul-03	2			2
2003045	30-Jun-03	15 Jul 03	29-Jul-03			2	2
2003046	7-Jul-03	21 Jul 03	4-Aug-03	2			2
2003047	15-Jul-03	29 Jul 03	12-Aug-03	2			2
2003048	21-Jul-03	04 Aug 03	18-Aug-03	2			2
2003049	25-Jul-03	08 Aug 03	22-Aug-03	2			2
2003050	30-Jul-03	13 Aug 03	27-Aug-03			2	2
2003051	5-Aug-03	19 Aug 03	3-Sep-03	2			2
2003052	8-Aug-03	22 Aug 03	8-Sep-03	2			2
2003053	15-Aug-03	29 Aug 03	15-Sep-03	2			2
2003054	20-Aug-03	04 Sep 03	18-Sep-03	2			2
2003055	25-Aug-03	09 Sep 03	23-Sep-03	2			2
2003056	27-Aug-03	11 Sep 03	25-Sep-03			2	2
2003057	2-Sep-03	16 Sep 03	30-Sep-03	2			2
2003058	5-Sep-03	19 Sep 03	3-Oct-03	2			2
2003059	10-Sep-03	24 Sep 03	8-Oct-03	2			2
2003060	15-Sep-03	29 Sep 03	14-Oct-03	2			2
2003061	22-Sep-03	06 Oct 03	21-Oct-03	2			2
2003062	30-Sep-03	15 Oct 03	29-Oct-03	2			2
	FY 03 TOTALS			**112**		**14**	**126**

Appendix C – IAC Quota Spreadsheet – FY03

					USAF			ANG			AFRC			TOTAL		
Class	Start Date	Flightline Start Date	Grad Date	Remarks	PFT Entries	Adjust	Adjusted Entries	PFT Entries	Adjust	Adjusted Entries	PFT Entries	Adjust	Adjusted Entries	PFT Entries	Adjust	Adjusted Entries
2003001	1-Oct-02	16 Oct 02	30-Oct-02		2		2							2		2
2003002	7-Oct-02	22 Oct 02	5-Nov-02		2		2							2		2
2003003	15-Oct-02	29 Oct 02	13-Nov-02		2		2							2		2
2003004	21-Oct-02	04 Nov 02	19-Nov-02		2		2							2		2
2003005	30-Oct-02	14 Nov 02	2-Dec-02								2		2	2		2
2003006	1-Nov-02	18 Nov 02	4-Dec-02		2		2							2		2
2003007	5-Nov-02	20 Nov 02	6-Dec-02		2		2							2		2
2003008	12-Nov-02	26 Nov 02	12-Dec-02		2		2							2		2
2003009	15-Nov-02	03 Dec 02	17-Dec-02		2		2							2		2
2003010	25-Nov-02	11 Dec 02	7-Jan-03		2		2							2		2
2003011	2-Dec-02	16 Dec 02	10-Jan-03		4		4							4		4
2003012	5-Dec-02	19 Dec 02	15-Jan-03		2		2							2		2
2003013	10-Dec-02	03 Jan 03	21-Jan-03		2		2							2		2
2003014	16-Dec-02	09 Jan 03	27-Jan-03		2		2							2		2
2003015	3-Jan-03	17 Jan 03	3-Feb-03		2		2							2		2
2003016	6-Jan-03	21 Jan 03	4-Feb-03		2		2							2		2
2003017	10-Jan-03	27 Jan 03	10-Feb-03		2		2							2		2
2003018	21-Jan-03	04 Feb 03	19-Feb-03		2		2							2		2
2003019	27-Jan-03	10 Feb 03	25-Feb-03								2		2	2		2
2003020	3-Feb-03	18 Feb 03	4-Mar-03		2		2							2		2
2003021	10-Feb-03	25 Feb 03	11-Mar-03		2		2							2		2
2003022	18-Feb-03	04 Mar 03	18-Mar-03		2		2							2		2
2003023	20-Feb-03	06 Mar 03	19-Mar-03		2		2							2		2
200323A	24-Feb-03	10 Mar 03	24-Mar-03	Class Added								2	2		2	2
2003024	25-Feb-03	11 Mar 03	25-Mar-03		2		2							2		2
2003025	3-Mar-03	17 Mar 03	31-Mar-03		2		2							2		2
2003026	10-Mar-03	24 Mar 03	7-Apr-03		2		2							2		2
2003027	17-Mar-03	31 Mar 03	14-Apr-03	Flightline CNX	2		2							2		2
2003028	25-Mar-03	08 Apr 03	22-Apr-03	Flightline CNX	2		2							2		2
2003029	31-Mar-03	14 Apr 03	28-Apr-03	Flightline CNX							2		2	2		2
2003030	7-Apr-03	21 Apr 03	5-May-03		2		2							2		2
2003031	15-Apr-03	29 Apr 03	13-May-03		2		2							2		2
2003032	21-Apr-03	05 May 03	19-May-03		2		2							2		2
2003033	25-Apr-03	09 May 03	23-May-03		2		2							2		2
2003034	30-Apr-03	14 May 03	29-May-03		2		2							2		2
2003035	5-May-03	19 May 03	3-Jun-03		2		2							2		2
2003036	12-May-03	27 May 03	10-Jun-03								2		2	2		2
2003037	15-May-03	30 May 03	13-Jun-03		2		2					2	2	2	2	4
2003038	20-May-03	04 Jun 03	18-Jun-03		2		2							2		2
2003039	27-May-03	10 Jun 03	24-Jun-03		2		2							2		2
2003040	30-May-03	13 Jun 03	27-Jun-03		2		2							2		2
2003041	5-Jun-03	19 Jun 03	3-Jul-03		2		2							2		2
2003042	10-Jun-03	24 Jun 03	9-Jul-03		2		2							2		2
2003043	16-Jun-03	30 Jun 03	15-Jul-03		2		2							2		2
2003044	25-Jun-03	10 Jul 03	24-Jul-03		2		2							2		2
2003045	30-Jun-03	15 Jul 03	29-Jul-03			2	2				2	-2		2		2
2003046	7-Jul-03	21 Jul 03	4-Aug-03		2		2							2		2
2003047	15-Jul-03	29 Jul 03	12-Aug-03		2		2							2		2
2003048	21-Jul-03	04 Aug 03	18-Aug-03		2		2							2		2
2003049	25-Jul-03	08 Aug 03	22-Aug-03		2		2							2		2
2003050	30-Jul-03	13 Aug 03	27-Aug-03								2		2	2		2
2003051	5-Aug-03	19 Aug 03	3-Sep-03		2		2							2		2
2003052	8-Aug-03	22 Aug 03	8-Sep-03		2		2					2	2	2	2	4
2003053	15-Aug-03	29 Aug 03	15-Sep-03		2		2							2		2
2003054	20-Aug-03	04 Sep 03	18-Sep-03		2		2							2		2
2003055	25-Aug-03	09 Sep 03	23-Sep-03		2		2							2		2
2003056	27-Aug-03	11 Sep 03	25-Sep-03								2		2	2		2
2003057	2-Sep-03	16 Sep 03	30-Sep-03		2		2							2		2
2003058	5-Sep-03	19 Sep 03	3-Oct-03		2		2							2		2
2003059	10-Sep-03	24 Sep 03	8-Oct-03		2		2							2		2
2003060	15-Sep-03	29 Sep 03	14-Oct-03		2		2							2		2
2003061	22-Sep-03	06 Oct 03	21-Oct-03		2		2							2		2
2003062	30-Sep-03	15 Oct 03	29-Oct-03		2		2							2		2
			FY 03 TOTALS		112	2	114				14	4	18	126	6	132

Appendix D – PFT Summary – FY04

SUMMARY OF C-17 FLYING HOURS

BASE														PFT	DATE	PAGE		
ALTUS	Training Days in FY 04 245													04-01	14-Mar-03	ii		
	INPUT				SYLLABUS			TRAINING DAYS										
COURSE	USAF AD	ANG	AFRC	TOT INP	HRS/ STD	PFT SRT	REFLY FACTOR	REFLY SRT	REFLY HRS	FY SRT*	FY HRS*	DAILY SRT*	DAILY HRS*	Day CT's	Night CT's	TOTAL DAYS	Day Sorties	Night Sorties
C-17 CIQ	144	30	90	264	4.50	2.0	6.0%	16	71	280	1259	1.14	5.14	0	0	55	280	0
C-17 AC	108	12	50	170	13.75	5.0	9.0%	38	210	463	2548	1.89	10.40	444	274	26	274	189
C-17 ACRQ	12	0	0	12	15.25	6.0	9.0%	3	16	39	199	0.16	0.81	20	8	51	26	14
C-17 ACIQ	46	0	0	46	19.75	8.0	9.0%	17	82	201	990	0.82	4.04	123	31	73	146	54
C-17 IAC	104	6	16	126	9.50	4.0	9.0%	23	108	275	1305	1.12	5.33	200	137	21	200	74
C-17 ACAD	46	0	8	54	17.50	6.0	3.0%	10	28	280	973	1.14	3.97	32	32	26	140	140
C-17 CAD	72	0	8	80	8.50	4.0	3.0%	5	10	165	690	0.67	2.82	0	0	26	82	82
C-17 SOC	10	0	1	11	8.00	2.0	0.0%	0	0	11	88	0.04	0.36	0	0	10	11	0
TOTALS	542	48	173	763				112	527	1714	8054	6.99	32.87	819	482		1159	554

OVERHEAD																		
AUTHORIZED CCTS PILOTS 60				AUTHORIZED CCTS LM 52										Day CT's	Night CT's		Day Sorties	Night Sorties
PILOT CURRENCY	% Requiring this event		SRT/PLT	Frequency	HRS/SRT													
TPS	100%		0.5	Quarterly	5		94	470	0.38	1.92	35	35		47	47			
DDS/ADAR	50%		0.5	Quarterly	5		62	310	0.25	1.27	4	12		16	47			
AL MSN EVALS	17%		0.5	Annual	5		6	28	0.02	0.11	6	0		6	0			
LM CURRENCY			SRT/LM															
LM PER AD CURRENCY	100%		0.25	Semi-annual	7		26	182	0.11	0.74	0	0		26	0			
DELIVERY	# of Deliveries			SRT PER	HRS/SRT													
ACFT SWAPS	5			2.0	4		5	20	0.02	0.08	0	0		5	0			
DEPOT INPUT/PICKUP	10			2.0	2		10	20	0.04	0.08	0	0		10	0			
OVERHEAD TOTALS				(Overhead % of Total	11.1%	)	203	1030	0.83	4.20								
SUBTOTAL							1917	9084	7.82	37.07								
INEFFECTIVE SORTIES due to MX Air Abort				5%			96	192	0.39	0.78	48	24		64	32			
GROUND INEFFECTIVE SORTIES (all reasons)				10%			192				0	0	CT's	128	63			
TOTAL REQUIRED							2205	9276	8.21	37.86	912	553	Reqd					
TOTAL SORTIES/HOURS REQUIRED							2205	9276	8.21	37.86	FY TOTAL HRS:			9276	1461	742		

ASD = 4.21 HRS/SORTIE

10 Aircraft	Sorties	Hours		
MAX MX SCHEDULED SORTIES (6 turn 3) / HOURS=	2205	9360	Max UTE	78.00
TOTAL SORTIES / HOURS REQUIRED	2205	9276	UTE	77.30
DELTA SORTIES	0	84		

	USAF AD	ANG	AFRC	TOT INP
LIQ	114	18	50	182
LAD	46	0	4	50
ILM	36	4	10	50
Totals	196	22	64	282

Turn Required	
Day	Night
5.96	3.03
CT's Required	
912	553

Appendix E – Refly Tracker

Add Entry

Aircraft Commander Initial Qual

		Reason										Correction				
Date	Class #	Attributable to Refly	AP	Cond Ops Assaults	CK/SA	WX	DNIF	Other	Added to Existing	Added to T-3 Refly	Added to Refly/Attrit	Hours added to Refly	Remarks
		31	43	25	14	0	1	16	27	0	11	16	2	32	13.7	
10-Mar-04	04-02/A	1		1										1		Retraining for Q-3 for AR 5 Mar
10-Mar-04	04-02/A	1		1										1		Recheck for Q-3 5 Mar
3-Mar-04	04-04/AB		1						1					1		R3 cnx for wx
3-Mar-04	04-02/AB		1						1		1			1		eval cnx for WX (600/2 waiver not appr)
1-Mar-04	04-02/AB		1								1			1		eval inc for no AR D2 FCIF restr
1-Mar-04	04-01/B	1			1									1		Q-3 assaults
27-Feb-04	04-03/AB	1		1										1		non-rec AR
24-Feb-04	04-02/AB		1						1			1			2	R7 inc due to wx, wet assault runway
20-Feb-04	04-01/B	1		1										1		rec unsat for AR
19-Feb-04	04-01/AB		1								1			1		Inc d2 tanker mx
11-Feb-04	04-01/AB		1								1			1		Inc for AR due 2 Tnkr Mx
4-Feb-04	04-27/AB		1						1			1			2	Eval Inc for wx
27-Jan-04	04-27/AB		1								1			1		R7 inc d2 tanker cnx
20-Jan-04	04-27/AB		1					1						1		inc for AR and assaults due to mx
16-Dec-03	04-25/B	1		1										1		(B) incomp for AR due to tanker availability
14-Dec-03	04-26/A		1						1			1		1	1.5	(A) eval incomp due to wx
12-Dec-03	04-26/AB		1						1					1		Eval incomplete due to wx
11-Dec-03	04-25/B	1		1	1									1		(B) Ride 7 unsat due to AR AP/Off. Did not accomplish Alz's due to xwinds
11-Dec-03	04-25/A		1						1			1			1.2	(A) Ride 7 incomp Alz's due to xwinds
8-Dec-03	04-26/AB		1		1			1	1					1		(A,B) incomp for Alz's and (B) for AR
2-Dec-03	04-25/AB		1						1					1		WX below mins for low level and VFR pattern
25-Nov-03	04-24/AB		1					1					1			ride 7 inc for #3 hyd sys pri and sec pump failure, lost transition

Appendix F – PFT Planner – FY04

PFT Refly Rates	ACAL	ACIQ	REQAL	INSTR	CIQ	AD
	9%	9%	9%	9%	6%	3%
Actual Refly Rates	16%	10%	8%	18%	6%	5%

Sortie Durations

	ACAL	ACIQ	REQAL	INSTR	CIQ	AD
Flight 1	6.0	4.0	5.0	5.0	5.0	4.5
Flight 2	6.0	5.0	5.0	4.0	4.0	4.5
Flight 3	5.0	5.0	5.0	5.0	4.0	4.5
Flight 4	5.0	5.0	5.0	5.0	N/A	5.5
Flight 5	5.5	5.0	5.0	N/A	N/A	4.5
Flight 6	N/A	5.0	5.5	N/A	N/A	5.0
Flight 7	N/A	5.0	N/A	N/A	N/A	N/A
Flight 8	N/A	5.5	N/A	N/A	N/A	N/A

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
Planned Attrition Rates	9.3%	5.8%	10.5%	8.8%	8.2%	4.2%	5.1%						
Training Days	22	17	16	20	19	23	22	20	22	21	22	21	
Max Day Lines	132	102	96	120	114	138	132	120	132	126	132	126	
Max Night Lines	88	68	64	80	76	92	88	80	88	84	88	84	
Max Total Lines	220	170	160	200	190	230	220	200	220	210	220	210	
Scheduled Day	131	100	86	101	103	132	129	116	120	115	125	110	
Scheduled Night	80	58	45	57	52	71	66	67	60	57	62	57	
Scheduled Total	211	158	131	158	155	203	195	183	180	172	187	167	
Delta Day	1	2	10	19	11	6	3	4	12	11	7	16	
Delta Night	8	10	19	23	24	21	22	13	28	27	26	27	
Delta Total	9	12	29	42	35	27	25	17	40	38	33	43	
Day CT Requirement	67	51	48	63	56	69	61	58	65	63	64	56	
Night CT Requirement	44	32	32	41	37	46	43	39	43	41	42	37	
Total CT Requirement	111	83	80	104	93	115	104	97	108	104	106	93	
CT's per Day	3.0	3.0	3.0	3.2	2.9	3.0	2.8	2.9	3.0	3.0	2.9	2.7	
CT's per Night	2.0	1.9	2.0	2.1	1.9	2.0	2.0	2.0	2.0	2.0	1.9	1.8	
CT's Day & Night	5.0	4.9	5.0	5.2	4.9	5.0	4.7	4.9	4.9	5.0	4.8	4.4	
T-2 ASD	5.0	4.9	4.9	4.9	4.8	5.0	4.9	5.0	5.0	5.0	5.0	5.0	Annual Hours
Programmed Hours	946.5	725	575.5	688	691	952	901	848.5	835.5	818.5	874.5	774	9630.0
Annual Contracted Hrs	881.0	725.0	565.0	659.0	637.0	928.0	886.0	827.0	812.5	812.0	869.0	755.5	9357
Delta	65.5	0	10.5	29	54	24	15	21.5	23	6.5	5.5	18.5	273
%Delta	7.43%	0.00%	1.86%	4.40%	8.48%	2.59%	1.69%	2.60%	2.83%	0.80%	0.63%	2.45%	
Actual Hours Flown	937.7	691.8	586.1	664.1	657.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Delta	56.7	-33.2	21.1	5.1	20.3	-928.0	-886.0	-827.0	-812.5	-812.0	-869.0	-755.5	
%Delta	6.44%	-4.58%	3.73%	0.77%	3.19%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	
Programmed T-3 Hours	70.5	62.0	62.0	99.5	66.0	79.5	75.5	70.0	74.0	71.5	67.5	63.5	
Attrition Loss per Day	4.0	2.5	3.8	3.0	3.0	1.7	2.1	0.0	0.0	0.0	0.0	0.0	
Hours per Training Day	40.0	42.6	35.3	33.0	33.5	40.3	40.3	41.4	36.9	38.7	39.5	36.0	
Actual Hours/Day	42.6	40.7	36.6	33.2	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Calculated Average Turn Rate

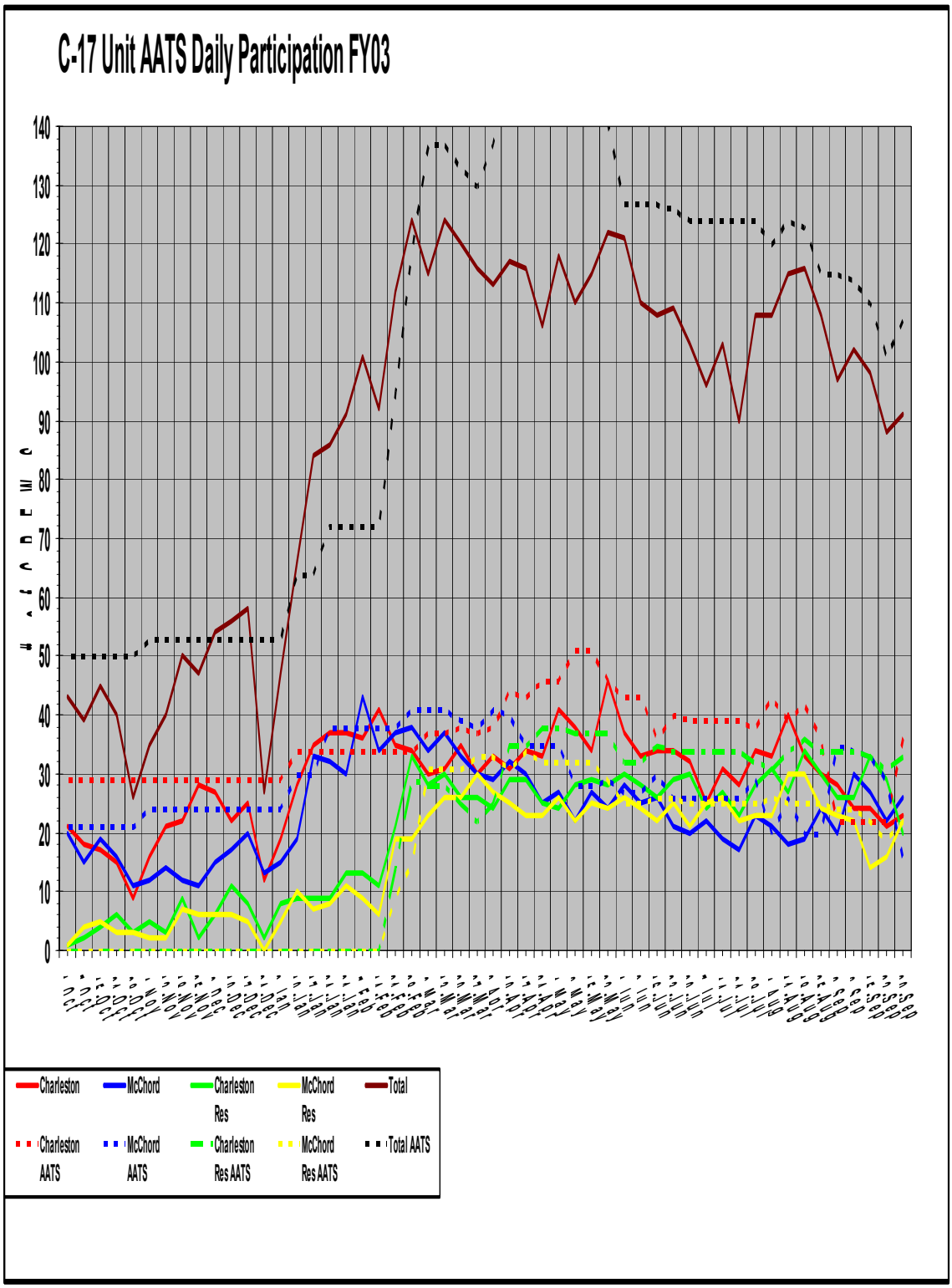
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Day	6.0	5.9	5.4	5.1	5.4	5.7	5.9	5.8	5.5	5.5	5.7	5.7
Delta	0.0	0.1	0.6	0.9	0.6	0.3	0.1	0.2	0.5	0.5	0.3	0.3
Night	3.6	3.4	2.8	2.9	2.7	3.1	3.0	3.4	2.7	2.7	2.8	2.8
Delta	0.4	0.6	1.2	1.1	1.3	0.9	1.0	0.6	1.3	1.3	1.2	1.2

	Max Turn
Day	6
Night	4

Appendix G – C-17FY Comp – FY03

# days in mth	31	30	31	31	28	31	30	31	31	31	31	30	366
FY03	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	FY Totals
Actual Numbers	02	02	02	03	03	03	03	03	03	03	03	03	
POSSESED HOURS	7167	6788.8	7417.5	7462	6177.9	6834	6222.6	6681	6399	6693.5	6743.3	6656.6	81243.2
MC HOUR	6079.9	5152.6	6616.8	6619	5158.9	5910.2	5422	5367.9	4994.5	5116	5276.3	5375.1	67089.2
NMCM HOUR	611.1	888.4	692.3	544	611.3	601	381.6	714.5	605.2	1101.6	783.2	651.7	8185.9
NMCS HOUR	340.7	560.3	48.2	71.6	285.9	171.2	300.8	273.4	447.2	191.8	312.4	337.7	3341.2
NMCB HOUR	135.3	187.5	60.2	227.4	121.8	151.6	118.2	325.2	352.1	284.1	371.4	292.1	2626.9
TNMCM HOUR	746.4	1075.9	752.5	771.4	733.1	752.6	499.8	1039.7	957.3	1385.7	1154.6	943.8	10812.8
TNMCS HOUR	476.0	747.8	108.4	299.0	407.7	322.8	419.0	598.6	799.3	475.9	683.8	629.8	5968.1
Mx NON-DELIVERY	0	1	0	0	0	1	0	1	2	0	4	2	11
SCHED SORTIES	183	168	162	215	202	186	180	182	182	178	185	169	2192
ADJ SCH	179	166	147	204	199	191	170	177	185	166	191	182	2157
LOCAL SORTIES FLOWN	175	166	140	199	200	199	170	180	192	171	186	189	2167
TOTAL SORTIES FLOWN	190	189	164	215	225	221	203	326	233	213	217	216	2612
TOTAL HOURS FLOWN	770.4	803.5	602.6	913.8	865.5	890.3	752.6	812.3	780.6	743.9	812.9	870.3	9618.7
PRIMARY ASSIGNED AIRCRAFT	10	10	10	10	10	10	10	10	10	10	10	10	120
AIR ABORTS	7	5	2	6	6	10	5	9	11	7	15	9	92
GROUND ABORTS	7	4	5	2	5	6	6	8	5	8	8	5	69
Mx LTO	8	12	5	5	7	5	2	10	10	6	12	8	90
TOTAL CANN	9	4	4	5	4	8	14	20	10	13	8	9	108
# BREAKS	10	8	8	11	11	12	6	13	11	7	15	10	122
# FIXES 12 HR	8	6	7	10	9	11	5	10	9	7	9	9	100
# Mx INEFF	0	1	0	1	1	1	3	3	8	4	11	6	39
CHARGEABLE DEVIATIONS	16	10	14	7	8	14	10	15	20	19	13	16	162
REPEATS	5	5	0	2	2	4	4	3	5	8	13	2	53
RECURS	5	2	2	3	1	1	4	1	1	3	6	2	31
C17 data for FY03													
RATES	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	FY03
POSSESED ACFT	9.6	9.4	10.0	10.0	9.2	9.2	8.6	9.0	8.6	9.0	9.1	9.2	9.2
MC RATE	84.8	75.9	89.2	88.7	83.5	86.5	87.1	80.3	78.1	76.4	78.2	80.7	82.6
NMCM RATE	8.5	13.1	9.3	7.3	9.9	8.8	6.1	10.7	9.5	16.5	11.6	9.8	10.1
NMCS RATE	4.8	8.3	0.6	1.0	4.6	2.5	4.8	4.1	7.0	2.9	4.6	5.1	4.1
NMCB RATE	1.9	2.8	0.8	3.0	2.0	2.2	1.9	4.9	5.5	4.2	5.5	4.4	3.2
TNMCM RATE	10.4	15.8	10.1	10.3	11.9	11.0	8.0	15.6	15.0	20.7	17.1	14.2	13.3
TNMCS RATE	6.6	11.0	1.5	4.0	6.6	4.7	6.7	9.0	12.5	7.1	10.1	9.5	7.3
NON-DELIVERY RATE	0.0	0.6	0.0	0.0	0.0	0.5	0.0	0.5	1.1	0.0	2.2	1.2	0.5
A/A RATE	3.7	2.6	1.2	2.8	2.7	4.5	2.5	2.8	4.7	3.3	6.9	4.2	3.5
GROUND ABORT RATE	3.8	2.4	3.4	1.0	2.4	2.9	3.4	0.0	2.5	4.5	4.1	2.6	3.1
TOTAL ABORT RATE	7.5	5.0	4.7	3.8	5.1	7.5	5.9	5.4	7.3	7.8	11.0	6.7	6.6
LTO RATE	4.6	7.2	3.6	2.5	3.5	2.5	1.2	5.6	5.2	3.5	6.5	4.2	4.2
CANN RATE/100 SORTIES	4.7	2.1	2.4	2.3	1.8	3.6	6.9	6.1	4.3	6.1	3.7	4.2	4.1
BREAK RATE	5.7	4.8	5.7	5.5	5.5	6.0	3.5	7.2	5.7	4.1	8.1	5.3	5.6
12 HR FIX RATE	80.0	75.0	87.5	90.9	81.8	91.7	83.3	76.9	81.8	100.0	60.0	90.0	82.0
Mx EFF RATE	100.0	99.4	100.0	99.5	99.5	99.5	98.2	98.3	95.8	97.7	94.1	96.8	98.2
SORTIE SCHED EFF RATE	91.1	94.0	90.5	96.6	96.0	92.7	94.1	91.5	89.2	88.6	93.2	91.2	92.5
													12
FY03													
MC check (should be 0)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					

Appendix H – Aircrew Aircraft Tasking System – FY03



Appendix I – ACIQ Grad Tracker - FY03 (Blue) & FY02 (Yellow)

Class #	Boeing Grad Date	Days Waiting in Queue	Flt Line Date	Days Since Last Arrival	PFT Grad	EST Grad	Date Last Flown	Grad +/-	Total Days in System	Days in Service
ACIQ-27	15 Dec 03	2	18 Dec 03	17	21 Jan 04	23 Jan 04	09 Feb 04	-12	29	27
ACIQ-26	17 Nov 03	1	19 Nov 03	3	12 Dec 03	17 Dec 03	17 Dec 03	-3	20	19
ACIQ-25	12 Nov 03	2	17 Nov 03	7	10 Dec 03	22 Dec 03	18 Dec 03	-8	25	23
ACIQ-24	02 Nov 03	4	07 Nov 03	5	01 Dec 03	04 Dec 03	04 Dec 03	-3	20	16
ACIQ-23	24 Oct 03	1	28 Oct 03	9	18 Nov 03	25 Nov 03	20 Nov 03	-5	22	21
ACIQ-22	12 Oct 03	2	16 Oct 03	8	07 Nov 03	06 Nov 03	06 Nov 03	1	16	14
ACIQ-21	30 Sep 03	2	03 Oct 03	10	27 Oct 03	30 Oct 03	30 Oct 03	-3	20	18
ACIQ-20	16 Sep 03	2	19 Sep 03	12	10 Oct 03	15 Oct 03	10 Oct 03	-3	20	18
ACIQ-19	28 Aug 03	5	08 Sep 03	12	24 Sep 03	17 Oct 03	15 Oct 03	-17	34	29
ACIQ-18	12 Aug 03	5	20 Aug 03	6	08 Sep 03	12 Sep 03	09 Sep 03	-4	21	16
ACIQ-17	03 Aug 03	7	13 Aug 03	0	27 Aug 03	09 Sep 03	03 Sep 03	-9	26	19
ACIQ-16	03 Aug 03	0	04 Aug 03	10	25 Aug 03	03 Sep 03	02 Sep 03	-7	24	24
ACIQ-15	19 Jul 03	1	22 Jul 03	7	12 Aug 03	21 Aug 03	12 Aug 03	-7	24	23
ACIQ-14	09 Jul 03	3	15 Jul 03	9	04 Aug 03	05 Aug 03	01 Aug 03	-1	18	15
ACIQ-13	25 Jun 03	7	08 Jul 03	13	21 Jul 03	28 Jul 03	21 Jul 03	-5	22	15
ACIQ-12	08 Jun 03	3	12 Jun 03	7	01 Jul 03	01 Jul 03	27 Jun 03	0	17	14
ACIQ-11	28 May 03	1	30 May 03	10	19 Jun 03	27 Jun 03	25 Jun 03	-6	23	22
ACIQ-10	13 May 03	1	15 May 03	8	06 Jun 03	11 Jun 03	06 Jun 03	-3	20	19
ACIQ-09	01 May 03	3	07 May 03	10	27 May 03	05 Jun 03	30 May 03	-7	24	21
ACIQ-08	17 Apr 03	2	22 Apr 03	7	12 May 03	09 May 03	07 May 03	1	16	14
ACIQ-07	08 Apr 03	1	10 Apr 03	17	01 May 03	07 May 03	05 May 03	-4	21	20
ACIQ-06	14 Mar 03	2	19 Mar 03	6	09 Apr 03	10 Apr 03		-1	18	16
ACIQ-05	06 Mar 03	2	11 Mar 03	9	01 Apr 03	07 Apr 03	01 Apr 03	-4	21	19
ACIQ-04	21 Feb 03	2	26 Feb 03	9	19 Mar 03	22 Apr 03	17 Apr 03	-24	41	39
ACIQ-03	07 Feb 03	2	12 Feb 03	10	06 Mar 03	17 Mar 03	13 Mar 03	-7	24	22
ACIQ-02	24 Jan 03	3	30 Jan 03	13	20 Feb 03	27 Feb 03	27 Feb 03	-5	22	19
ACIQ-01	06 Jan 03	4	13 Jan 03	5	31 Jan 03	31 Jan 03	29 Jan 03	0	17	13
ACIQ-43	15 Dec 02	7	08 Jan 03	5	22 Jan 03	31 Jan 03	29 Jan 03	-7	24	17
ACIQ-42	08 Dec 02	6	17 Dec 02	5	15 Jan 03	28 Jan 03	25 Jan 03	-9	26	20
ACIQ-41	27 Nov 02	5	09 Dec 02	3	09 Jan 03	13 Jan 03	13 Jan 03	-2	19	14
ACIQ-40	24 Nov 02	1	26 Nov 02	5	18 Dec 02	16 Jan 03	14 Jan 03	-6	23	22
ACIQ-39	17 Nov 02	3	21 Nov 02	8	12 Dec 02	19 Dec 02		-5	22	19
ACIQ-38	04 Nov 02	5	13 Nov 02	2	05 Dec 02	16 Dec 02		-7	24	19
ACIQ-37	31 Oct 02	2	05 Nov 02	4	27 Nov 02	16 Dec 02		-13	30	28
ACIQ-36	27 Oct 02	1	29 Oct 02	13	21 Nov 02	25 Nov 02		-2	19	18
ACIQ-34	07 Oct 02	2	10 Oct 02	14	01 Nov 02	18 Nov 02		-11	28	26
ACIQ-33	17 Sep 02	1	19 Sep 02	11	11 Oct 02	18 Oct 02		-5	22	21
ACIQ-31	31 Aug 02	2	05 Sep 02	11	26 Sep 02	27 Sep 02		-1	18	16
ACIQ-29	15 Aug 02	4	22 Aug 02	5	11 Sep 02	19 Sep 02		-6	23	19
ACIQ-28	08 Aug 02	6	19 Aug 02	9	04 Sep 02	05 Sep 02		-1	18	12
ACIQ-27	28 Jul 02	3	01 Aug 02	9	22 Aug 02	22 Aug 02		0	17	14
ACIQ-26	15 Jul 02	5	23 Jul 02	4	15 Aug 02	27 Aug 02		-8	25	20
ACIQ-24	09 Jul 02	2	12 Jul 02	6	02 Aug 02	07 Aug 02		-3	20	18
ACIQ-23	29 Jun 02	6	10 Jul 02	5	26 Jul 02	30 Jul 02		-2	19	13
ACIQ-22	23 Jun 02	4	28 Jun 02	5	22 Jul 02	30 Jul 02		-6	23	19
ACIQ-13	17 Jun 02	6	26 Jun 02	4	12 Jul 02	31 Jul 02		-13	30	24
ACIQ-20	16 Jun 02	6	25 Jun 02	0	12 Jul 02	17 Jul 02		-3	20	14
ACIQ-19	09 Jun 02	4	14 Jun 02	5	08 Jul 02	08 Jul 02		0	17	13
ACIQ-18	24 May 02	2	30 May 02	9	20 Jun 02	17 Jun 02		3	14	12
ACIQ-17	17 May 02	2	22 May 02	5	13 Jun 02	19 Jun 02		-4	21	19
ACIQ-16	08 May 02	4	15 May 02	7	03 Jun 02	10 Jun 02		-5	22	18
ACIQ-15	07 May 02	4	14 May 02	1	30 May 02	30 May 02		0	17	13
ACIQ-14	26 Apr 02	2	01 May 02	7	17 May 02	22 May 02		-3	20	18
ACIQ-12	18 Apr 02	0	18 Apr 02	6	08 May 02	13 May 02		-3	20	20
ACIQ-11	17 Apr 02	0	17 Apr 02	1	29 Apr 02	13 May 02		-10	27	27
ACIQ-10	25 Mar 02	10	09 Apr 02	17	18 Apr 02	09 May 02		-15	32	22
ACIQ-09	23 Mar 02	8	04 Apr 02	1	17 Apr 02	26 Apr 02		-7	24	16
ACIQ-08	11 Mar 02	15	02 Apr 02	9	04 Apr 02	29 Apr 02		-17	34	19
ACIQ-07	26 Feb 02	12	15 Mar 02	9	29 Mar 02	09 Apr 02		-7	24	12
ACIQ-04	29 Jan 02	17	25 Feb 02	19	25 Feb 02	27 Mar 02		-22	39	22
ACIQ-03	22 Jan 02	11	07 Feb 02	5	13 Feb 02	04 Mar 02		-12	29	18
ACIQ-02	15 Jan 02	4	23 Jan 02	4	07 Feb 02	11 Mar 02		-22	39	35
ACIQ-01	21 Dec 01	4	08 Jan 02	7	29 Jan 02	14 Feb 02		-12	29	25
2003	Mean	2.593		8.852	2003	Mean	-5.407	22.407	19.815
	Std Dev	1.760		3.759		Std Dev	5.437	5.437	5.554
	Variance	3.097		14.131		Variance	29.558	29.558	30.849
2002	Mean	4.889		6.667	2002	Mean	-6.833	23.833	18.944
	Std Dev	3.955		4.309		Std Dev	5.969	5.969	5.076
	Variance	15.644		18.571		Variance	35.629	35.629	25.768

Appendix J – IAC Grad Tracker - FY03 (Blue)

Class #	Boeing Grad Date	Days Waiting in Queue	Flt Line Date	Days Since Last Arrival	PFT Grad	EST Grad	Date Last Flown	Grad +/-	Total Days in System	Days in Service
IAC-62	15 Oct 03	1	17 Oct 03	8	29 Oct 03	28 Oct 03	24 Oct 03	1	11	10
IAC-61	06 Oct 03	0	07 Oct 03	4	21 Oct 03	20 Oct 03	10 Oct 03	1	11	11
IAC-60	28 Sep 03	3	02 Oct 03	7	14 Oct 03	15 Oct 03	10 Oct 03	-1	13	10
IAC-59	23 Sep 03	0	24 Sep 03	3	08 Oct 03	04 Nov 03	20 Oct 03	-19	31	31
IAC-58	18 Sep 03	1	22 Sep 03	4	03 Oct 03	31 Oct 03	14 Oct 03	-20	32	31
IAC-57	12 Sep 03	2	17 Sep 03	1	30 Sep 03	29 Sep 03	29 Sep 03	1	11	9
IAC-56	09 Sep 03	5	17 Sep 03	5	25 Sep 03	25 Sep 03	25 Sep 03	0	12	7
IAC-55	08 Sep 03	2	11 Sep 03	3	23 Sep 03	23 Sep 03	23 Sep 03	0	12	10
IAC-54	04 Sep 03	2	09 Sep 03	5	18 Sep 03	01 Oct 03	01 Oct 03	-9	21	19
IAC-53	29 Aug 03	1	03 Sep 03	1	15 Sep 03	19 Sep 03	17 Sep 03	-4	16	15
IAC-52A	22 Aug 03	6	03 Sep 03	2	08 Sep 03	17 Sep 03	06 Sep 03	-7	19	13
IAC-52	22 Aug 03	5	02 Sep 03	1	08 Sep 03	16 Sep 03	09 Sep 03	-6	18	13
IAC-51	19 Aug 03	8	02 Sep 03	8	03 Sep 03	25 Sep 03	25 Sep 03	-16	28	20
IAC-50	12 Aug 03	7	22 Aug 03	7	27 Aug 03	04 Sep 03	02 Sep 03	-6	18	11
IAC-49	06 Aug 03	5	14 Aug 03	3	22 Aug 03	29 Aug 03	25 Aug 03	-5	17	12
IAC-48	31 Jul 03	7	12 Aug 03	9	18 Aug 03	20 Aug 03	14 Aug 03	-2	14	7
IAC-47	27 Jul 03	3	31 Jul 03	6	12 Aug 03	28 Aug 03	14 Aug 03	-12	24	21
IAC-46	20 Jul 03	3	24 Jul 03	4	04 Aug 03	05 Aug 03	01 Aug 03	-1	13	10
IAC-45	12 Jul 03	5	21 Jul 03	5	29 Jul 03	29 Jul 03	21 Jul 03	0	12	7
IAC-44	08 Jul 03	4	15 Jul 03	4	24 Jul 03	01 Aug 03	01 Aug 03	-6	18	14
IAC-43	26 Jun 03	8	10 Jul 03	13	15 Jul 03	17 Jul 03	15 Jul 03	-2	14	6
IAC-42	21 Jun 03	1	24 Jun 03	3	09 Jul 03	24 Jul 03	21 Jul 03	-11	23	22
IAC-41	18 Jun 03	1	20 Jun 03	4	03 Jul 03	02 Jul 03	30 Jun 03	1	11	10
IAC-40	08 Jun 03	6	17 Jun 03	4	27 Jun 03	30 Jun 03	26 Jun 03	-1	13	7
IAC-39	06 Jun 03	3	12 Jun 03	1	24 Jun 03	26 Jun 03	20 Jun 03	-2	14	11
IAC-38	04 Jun 03	5	12 Jun 03	5	18 Jun 03	23 Jun 03	17 Jun 03	-3	15	10
IAC-37A	30 May 03	4	06 Jun 03	2	13 Jun 03	11 Jun 03	06 Jun 03	2	10	6
IAC-37	28 May 03	5	05 Jun 03	4	13 Jun 03	23 Jun 03	23 Jun 03	-6	18	13
IAC-36	26 May 03	3	02 Jun 03	9	10 Jun 03	26 Jun 03	24 Jun 03	-12	24	21
IAC-35	18 May 03	2	21 May 03	3	03 Jun 03	02 Jun 03	29 May 03	1	11	9
IAC-34	12 May 03	4	19 May 03	5	29 May 03	30 May 03	23 May 03	-1	13	9
IAC-33	07 May 03	3	13 May 03	6	23 May 03	23 May 03	16 May 03	0	12	9
IAC-32	01 May 03	2	06 May 03	5	19 May 03	28 May 03	23 May 03	-7	19	17
IAC-31	28 Apr 03	1	30 Apr 03	7	13 May 03	15 May 03	15 May 03	-2	14	13
IAC-30	21 Apr 03	0	22 Apr 03	19	05 May 03	15 May 03	05 May 03	-8	20	20
IAC-26	23 Mar 03	3	27 Mar 03	5	07 Apr 03	10 Apr 03		-3	15	12
IAC-25	16 Mar 03	4	21 Mar 03	2	31 Mar 03	08 Apr 03	01 Apr 03	-6	18	14
IAC-24	10 Mar 03	7	20 Mar 03	3	25 Mar 03	01 Apr 03		-5	17	10
IAC-23A	09 Mar 03	6	18 Mar 03	2	24 Mar 03	02 Apr 03	02 Apr 03	-7	19	13
IAC-23	06 Mar 03	6	17 Mar 03	9	19 Mar 03	28 Mar 03		-7	19	13
IAC-22	04 Mar 03	0	05 Mar 03	5	18 Mar 03	17 Mar 03	12 Mar 03	1	11	11
IAC-21	20 Feb 03	4	27 Feb 03	14	11 Mar 03	13 Mar 03	11 Mar 03	-2	14	10
IAC-19	11 Feb 03	0	10 Feb 03	3	25 Feb 03	22 Feb 03	19 Feb 03	1	11	11
IAC-18	05 Feb 03	0	06 Feb 03	7	19 Feb 03	14 Feb 03	13 Feb 03	3	9	9
IAC-17	26 Jan 03	2	29 Jan 03	3	10 Feb 03	21 Feb 03	18 Feb 03	-9	21	19
IAC-16	16 Jan 03	4	25 Jan 03	1	04 Feb 03	05 Feb 03	04 Feb 03	-1	13	9
IAC-15	15 Jan 03	5	24 Jan 03	7	03 Feb 03	03 Feb 03	27 Jan 03	0	12	7
IAC-14	10 Jan 03	3	16 Jan 03	5	27 Jan 03	25 Jan 03	21 Jan 03	0	12	9
IAC-13	04 Jan 03	1	10 Jan 03	2	21 Jan 03	22-Jan-03	17 Jan 03	-1	13	12
IAC-12	16 Dec 02	9	09 Jan 03	2	15 Jan 03	22-Jan-03	17 Jan 03	-5	17	8
IAC-11A	15 Dec 02	9	08 Jan 03	1	10 Jan 03	17-Jan-03	13 Jan 03	-5	17	8
IAC-11	15 Dec 02	9	08 Jan 03	20	10 Jan 03	16-Jan-03	10 Jan 03	-4	16	7
IAC-10	10 Dec 02	1	12 Dec 02	4	07 Jan 03	20-Dec-02	20 Dec 02	1	11	10
IAC-09	24 Nov 02	8	09 Dec 02	10	17 Dec 02	20-Dec-02		-3	15	7
IAC-08	25 Nov 02	0	26 Nov 02	2	12 Dec 02	17-Dec-02		-3	15	15
IAC-07	18 Nov 02	4	25 Nov 02	4	06 Dec 02	6-Dec-02		0	12	8
IAC-06	17 Nov 02	2	20 Nov 02	4	04 Dec 02	5-Dec-02		-1	13	11
IAC-05	10 Nov 02	3	15 Nov 02	8	02 Dec 02	2-Dec-02		0	12	9
IAC-04	01 Nov 02	2	06 Nov 02	7	19 Nov 02	18-Nov-02		1	11	9
IAC-03	27 Oct 02	1	29 Oct 02	6	13 Nov 02	8-Nov-02		3	9	8
IAC-02	20 Oct 02	1	22 Oct 02	4	05 Nov 02	6-Nov-02		-1	13	12
IAC-01	12 Oct 02	2	17 Oct 02	6	30 Oct 02	28-Oct-02		2	10	8
2003	Mean	3.452		5.258	2003	Mean	-3.435	15.435	11.984
	Std Dev	2.565		3.824		Std Dev	5.004	5.004	5.305
	Variance	6.580		14.621		Variance	25.037	25.037	28.147

Appendix J (cont) – IAC Grad Tracker - FY02 (Yellow)

Class #	Boeing Grad Date	Days Waiting in Queue	Flt Line Date	Days Since Last Arrival	PFT Grad	EST Grad	Date Last Flown	Grad +/-	Total Days in System	Days in Service
IAC-44	07 Oct 02	2	10 Oct 02	4	23 Oct 02	23-Oct-02		0	0	-2
IAC-43	01 Oct 02	3	07 Oct 02	11	18 Oct 02	21-Oct-02		**-1**	1	-2
IAC-41	18 Sep 02	2	23 Sep 02	11	03 Oct 02	4-Oct-02		**-1**	1	-1
IAC-40	04 Sep 02	2	09 Sep 02	11	19 Sep 02	27-Sep-02		**-6**	6	4
IAC-39	20 Aug 02	3	26 Aug 02	10	06 Sep 02	3-Sep-02		3	-3	-6
IAC-38	06 Aug 02	4	13 Aug 02	15	23 Aug 02	3-Sep-02		**-7**	7	3
IAC-37	18 Jul 02	3	24 Jul 02	2	05 Aug 02	1-Aug-02		2	-2	-5
IAC-36	16 Jul 02	4	23 Jul 02	3	31 Jul 02	31-Jul-02		0	0	-4
IAC-35	10 Jul 02	6	19 Jul 02	8	25 Jul 02	29-Jul-02		-2	2	-4
IAC-34	02 Jul 02	4	10 Jul 02	8	22 Jul 02	18-Jul-02		2	-2	-6
IAC-33	27 Jun 02	1	01 Jul 02	8	10 Jul 02	24-Jul-02		-10	10	9
IAC-32	14 Jun 02	3	20 Jun 02	6	02 Jul 02	1-Jul-02		1	-1	-4
IAC-31	09 Jun 02	3	13 Jun 02	7	26 Jun 02	24-Jun-02		2	-2	-5
IAC-30	02 Jun 02	2	05 Jun 02	6	18 Jun 02	19-Jun-02		-1	1	-1
IAC-29	18 May 02	6	29 May 02	9	05 Jun 02	12-Jun-02		-5	5	-1
IAC-28	10 May 02	4	17 May 02	9	28 May 02	10-Jun-02		-9	9	5
IAC-27	05 May 02	1	07 May 02	3	20 May 02	21-May-02		-1	1	0
IAC-26	29 Apr 02	3	03 May 02	4	15 May 02	20-May-02		-3	3	0
IAC-25	25 Apr 02	2	30 Apr 02	3	09 May 02	15-May-02		-4	4	2
IAC-24	19 Apr 02	4	26 Apr 02	6	06 May 02	8-May-02		-2	2	-2
IAC-23	19 Apr 02	0	19 Apr 02	4	26 Apr 02	6-May-02		-6	6	6
IAC-22	15 Apr 02	0	16 Apr 02	7	17 Apr 02	23-Apr-02		-4	4	4
IAC-21	17 Mar 02	15	08 Apr 02	11	01 Apr 02	15-Apr-02		-10	10	-5
IAC-19	08 Mar 02	10	25 Mar 02	5	22 Mar 02	4-Apr-02		-9	9	-1
IAC-18	24 Feb 02	16	19 Mar 02	5	12 Mar 02	28-Mar-02		-12	12	-4
IAC-17	16 Feb 02	16	13 Mar 02	2	06 Mar 02	29-Mar-02		-17	17	1
IAC-16	14 Feb 02	16	12 Mar 02	11	05 Mar 02	19-Mar-02		-10	10	-6
IAC-15	05 Feb 02	13	26 Feb 02	2	22 Feb 02	13-Mar-02		-13	13	0
IAC-14	27 Jan 02	19	25 Feb 02	6	12 Feb 02	7-Mar-02		-17	17	-2
IAC-13	19 Jan 02	4	18 Feb 02	12	07 Feb 02	15-Mar-02		-26	26	22
IAC-12	18 Jan 02	8	01 Feb 02	9	05 Feb 02	14-Feb-02		-7	7	-1
IAC-11	16 Jan 02	2	22 Jan 02	10	04 Feb 02	6-Feb-02		-2	2	0
IAC-10	05 Jan 02	2	09 Jan 02	3	22 Jan 02	1-Feb-02		-8	8	6
IAC-09	12-Dec-01	9	05 Jan 02	30	10 Jan 02	15-Jan-02		-3	3	-6
IAC-08	9-Dec-01	0	26-Nov-01	4	6-Dec-01	13-Dec-01		-5	5	5
IAC-07	19-Nov-01	14	21-Nov-01	6	14-Dec-01	17-Dec-01		-1	1	-13
IAC-06	13-Nov-01	0	14-Nov-01	2	30-Nov-01	5-Dec-01		-3	3	3
IAC-05B	12-Nov-01	0	13-Nov-01	1	29-Nov-01	27-Nov-01		2	-2	-2
IAC-05A	12-Nov-01	0	13-Nov-01	1	29-Nov-01	7-Dec-01		-6	6	6
IAC-05	12-Nov-01	0	13-Nov-01	7	29-Nov-01	30-Nov-01		-1	1	1
IAC-04	4-Nov-01	0	5-Nov-01	1	20-Nov-01	15-Nov-01		3	-3	-3
IAC-03	28-Oct-01	11	4-Nov-01	8	13-Nov-01	19-Nov-01		-1	1	-10
IAC-02	22-Oct-01	1	24-Oct-01	3	6-Nov-01	5-Nov-01		1	-1	-2
IAC-01	15-Oct-01	11	21-Oct-01	5	30-Oct-01	2-Nov-01		-3	3	-8
2002	Mean	5.205		6.795	2002	Mean		-4.545	16.545	11.341
	Std Dev	5.429		4.991		Std Dev		6.039	6.039	5.691
	Variance	29.469		24.911		Variance		36.473	36.473	32.382

Appendix K – ACIQ - Training Management Systems – FY03

Class	Start Date	Instructor Comments	Student Number	Graded Date	Lesson Number	Lesson Title	# of Rides	Planned Grad Date	Days Late
ACIQ-02	23-Oct-02	PROFILE: Local pattern at	1	30-Jan-03	05.7208	FLT: DAY TACTICAL P	1		
	23-Oct-02	PROFILE: AR312 x 2,	1	4-Feb-03	05.7209	FLT: DAY AIR REFUEL	2		
	23-Oct-02	PROFILE: Day 3: Ground	1	6-Feb-03	05.7210	FLT: DAY AIR REFUEL	3		
	23-Oct-02	PROFILE: AR313 X 1, MC	1	9-Feb-03	05.7210	FLT: DAY AIR REFUEL	4		
	23-Oct-02	PROFILE: VFR Pattern	1	11-Feb-03	05.7211	FLT: DAY DDS MISSIO	5		
	23-Oct-02	PROFILE: AR400NS, Day	1	13-Feb-03	05.7212	FLT: DAY DDS MISSIO	6		
	23-Oct-02	PROFILE:Day VMC KLTS	1	14-Feb-03	05.7212	FLT: DAY DDS MISSIO	7		
	23-Oct-02	PROFILE: Due to Mx delay	1	21-Feb-03	05.7213	FLT: NIGHT AIR REFU	8		
	23-Oct-02	PROFILE: Hobart 1 to	1	23-Feb-03	05.7213	FLT: NIGHT AIR REFU	9		
	23-Oct-02	Caddo 89 AR400 single w/	1	25-Feb-03	05.7214	FLT: REC RIDE/NIGHT	10		
	23-Oct-02	Q1 - See Form 8□	1	27-Feb-03	05.7215	FLT: USAF EVALUATIO	11	20-Feb-03	5
ACIQ-02	23-Oct-02	PROFILE: Local pattern at	2	30-Jan-03	05.7208	FLT: DAY TACTICAL P	1		
	23-Oct-02	PROFILE: AR312 x 2,	2	4-Feb-03	05.7209	FLT: DAY AIR REFUEL	2		
	23-Oct-02	PROFILE: Day 3: Ground	2	6-Feb-03	05.7210	FLT: DAY AIR REFUEL	3		
	23-Oct-02	PROFILE: AR313 X 1, MC	2	8-Feb-03	05.7210	FLT: DAY AIR REFUEL	4		
	23-Oct-02	PROFILE: VR191, Visual	2	11-Feb-03	05.7211	FLT: DAY DDS MISSIO	5		
	23-Oct-02	PROFILE: AR400NS, Day	2	13-Feb-03	05.7212	FLT: DAY DDS MISSIO	6		
	23-Oct-02	PROFILE: Day VMC,Lcl	2	14-Feb-03	05.7212	FLT: DAY DDS MISSIO	7		
	23-Oct-02	PROFILE: Due to Mx delay	2	21-Feb-03	05.7213	FLT: NIGHT AIR REFU	8		
	23-Oct-02	PROFILE: Hobart 1 to	2	23-Feb-03	05.7213	FLT: NIGHT AIR REFU	9		
	23-Oct-02	Caddo 89 AR400 single w/	2	25-Feb-03	05.7214	FLT: REC RIDE/NIGHT	10		
	23-Oct-02	Passed - See Form 8□	2	27-Feb-03	05.7215	FLT: USAF EVALUATIO	11	20-Feb-03	5
ACIQ-01	3-Oct-02	PROFILE: □	1	9-Jan-03	05.7208	FLT: DAY TACTICAL P	1		
	3-Oct-02	PROFILE: Pattern delay ILS	1	13-Jan-03	05.7209	FLT: DAY AIR REFUEL	2		
	3-Oct-02	PROFILE: GOATS/FULL	1	16-Jan-03	05.7210	FLT: DAY AIR REFUEL	3		
	3-Oct-02	Performance:□	1	22-Jan-03	05.7211	FLT: DAY DDS MISSIO	4		
	3-Oct-02	PROFILE: □	1	23-Jan-03	05.7212	FLT: DAY DDS MISSIO	5		
	3-Oct-02	PROFILE: AR 312H X2,	1	27-Jan-03	05.7213	FLT: NIGHT AIR REFU	6		
	3-Oct-02	PROFILE: Assaults, gnd	1	30-Jan-03	05.7214	FLT: REC RIDE/NIGHT	7		
	3-Oct-02	Evaluation completed, see	1	3-Feb-03	05.7215	FLT: USAF EVALUATIO	8	31-Jan-03	1
ACIQ-01	3-Oct-02	PROFILE: □	2	9-Jan-03	05.7208	FLT: DAY TACTICAL P	1		
	3-Oct-02	PROFILE: Pattern delay ILS	2	13-Jan-03	05.7209	FLT: DAY AIR REFUEL	2		
	3-Oct-02	PROFILE: GOATS/ AR	2	16-Jan-03	05.7210	FLT: DAY AIR REFUEL	3		
	3-Oct-02	PROFILE: IR103, AR400,	2	22-Jan-03	05.7211	FLT: DAY DDS MISSIO	4		
	3-Oct-02	PROFILE: Day, VFR, DDS.	2	23-Jan-03	05.7212	FLT: DAY DDS MISSIO	5		
	3-Oct-02	Profile: Refly for A/R	2	24-Jan-03	05.7212	FLT: DAY DDS MISSIO	6		
	3-Oct-02	PROFILE: AR 312H X2,	2	27-Jan-03	05.7213	FLT: NIGHT AIR REFU	7		
	3-Oct-02	PROFILE: Assaults, gnd	2	30-Jan-03	05.7214	FLT: REC RIDE/NIGHT	8		
	3-Oct-02	See Form 8□	2	3-Feb-03	05.7215	FLT: USAF EVALUATIO	9	31-Jan-03	1
								Avg days late	4.333

2003

27 Classes = 54 Students w/ 8 planned flights each = 432 flight training events
27 Classes w/ 8 planned flights each = 216 sorties

# rides req'd to complete program	# studs who tooks at least this # rides	# of times student took exactly this many rides to complete program	%	Lesson #	Total # of times flown	# of repeats for this lesson number	
8	53	7	13.21%	05.7208	62	9	8.57%
9	46	16	30.19%	05.7209	55	2	1.90%
10	30	11	20.75%	05.7210	63	10	9.52%
11	19	11	20.75%	05.7211	61	8	7.62%
12	8	7	13.21%	05.7212	81	28	26.67%
13	1	1	1.89%	05.7213	63	10	9.52%
14	0	0	0.00%	05.7214	83	30	28.57%
15	0	0		05.7215	61	8	7.62%
Reflys	104	54	100.00%	Total Flights	529	105	100.00%
				Planned Flights	424	Refly %	24.53%

Abbreviations

A/A	Air Abort
AATS	Aircraft Aircrew Tasking System
AC	Aircraft Commander
ACAD	Aircraft Commander Airdrop
ACAL	Aircraft Commander Airland
ACFT	Aircraft
ACIQ	Aircraft Commander Initial Qualification
ACRQ	Aircraft Commander Requalification
AD	Active Duty
ADJ	Adjustment
AETC	Air Education & Training Command
AF	Air Force
AFB	Air Force Base
AFRC	Air Force Reserve Command
AL	Airland
AMC	Air Mobility Command
AMMP	Air Mobility Master Plan
ANG	Air National Guard
AR	Air Refeuling
AS	Airlift Squadron
ASD	Average Sortie Duration
BAI	Backup Aircraft Inventory
CAD	Copilot Airdrop
CANN	Cannibalization
CBT	Computer-Based-Training
CCTS	Combat Crew Training School
CIQ	Copilot Initial Qualification
CNX	Cancel(ed)
COMP	Complete
CT	Control Time
DDS	Direct Delivery Sortie
DEV	Deviation
DNIF	Duty Not Involving Flying
EFF	Efficiency
ENAF	Emergency Nuclear Airlift
EVAL	Evaluation
FLT	Flight
FSD	Flight Line Start Date
FY	Fiscal Year
GK	General Knowledge
GND OPS	Ground Operations
IAC	Instructor Aircraft Commander

IBT	Instructor Based Training
INP	Input(s)
INSTR	Instructor
JCS	Joint Chiefs of Staff
LM	Loadmaster
LTO	Late Takeoff
MAF	Mobility Air Forces
MC	Mission Capable
MP	Mission Planning
MSN	Mission
MX	Maintenance
NMCB	Not Mission Capable - Both
NMCM	Not Mission Capable - Maintenance
NMCS	Not Mission Capable - Supply
PAA	Primary Aircraft Authorization
PAI	Primary Aircraft Inventory
PFT	Program Flying Training
PLT	Pilot
REQUAL	Requalification
REC	Recommend
RES	Reserves
SA	Situational Awareness
SOC	Senior Officer Course
SRT	Sortie(s)
STD DEV	Standard Deviation
T-3	Local Training Sortie
TACC	Tanker Airlift Control Center
TDY	Temporary Duty
TMS	Training Management System
TNMCM	Total Not Mission Capable - Maintenance
TNMCS	Total Not Mission Capable - Supply
TPS	Tactical Proficiency Sortie
USAF	United States Air Force
USTRANSCOM	United States Transportation Command
UTE	Utilization
WX	Weather

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14. ABSTRACT

The C-17 pilot training pipeline at Altus Air Force Base is perpetually behind schedule, straining financial and human resources. This research analyzes the extent, significance and sources of those delays. Additionally, the paper offers solutions to the predicament.

This research examines most of the current databases used for tracking the flow and effectiveness of the different programs at Altus, including those employed by both training organizations, Boeing Aerospace and the 58th Airlift Squadron. This paper includes some basic analysis regarding the numerical statistics contained within those databases and describes the consequences of those delays, both from a training and operational perspective. The emphasis is on two of the more-troubled courses, the Aircraft Commander Initial Qualification and the Instructor Aircraft Commander programs. Despite a slight improvement over previous years, those two programs still suffered from poor graduation timeliness in 2003.

The sources of those delays include higher-than-expected student retraining rates and under-sourced aircraft allocations. Potential solutions range from adding and protecting aircraft resources to revising current database tracking methods. Other viable options include adjusting program timelines to reflect a more accurate training environment and overlapping simulator and flight training phases. Fortunately, significant improvement in the C-17 training arena can be harnessed with the acceptance of these relatively simple

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